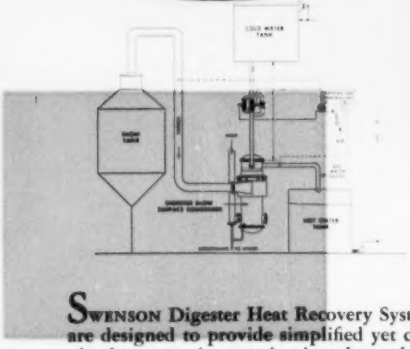
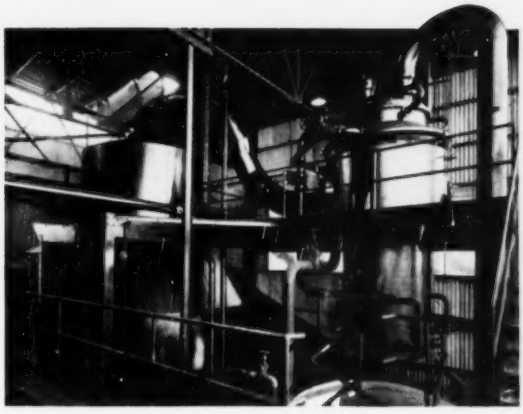
Paper
TRADE JOURNAL
NOVEMBER 24, 1949
PUBLISHED WEEKLY

SWENSON
DIGESTER
HEAT RECOVERY
SYSTEMS





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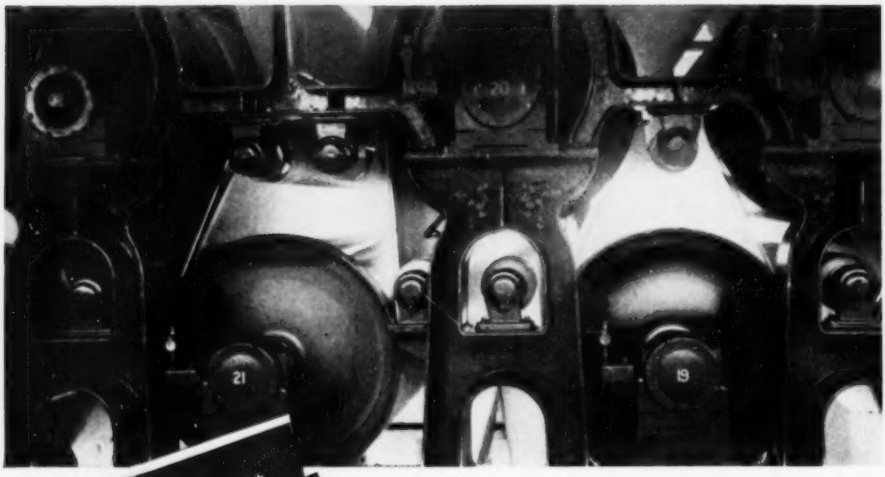
DON'T STOP PRODUCTION

TO CLEAN CIRCULATING SYSTEMS



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PUBLISHED
EVERY THURSDAY
by
LOCKWOOD
TRADE JOURNAL CO., INC.
16 West Forty-Seventh Street
New York 19, N. Y.
Phone: PLaza 7-2370

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Subscriptions
Payable in advance.
By the year, $5.00
Single copy 15 Cents
Canada, $7.00
Other Foreign countries, $8.50

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NOVEMBER 24, 1949 In This Issue

FEATURES

	Page
The Paper Market As Seen by The National Assn. of Purchasing Agents	14
Realism Requires World Federation	18
Electro-Hydraulic De-Barker	20
Westinghouse Mid-Century Review and Forecast Forum	21
Zein as a Calender Size for Paperboard	25
Modifying Paper Characteristics Through Chemical Additives	26
Elimination of Two-Sidedness	29
Route Designation Rights	37

DEPARTMENTS

	Page		Page
Trends	6	Prices	34
Mills	8	Materials	35
Associations	11	Imports-Exports	35
Markets	14	Traffic	37
World Affairs	18	Letters	39
Suppliers	19	Awards	39
Industrial Development Section	25	Obituaries	39
Patent Abstracts	31	Production Ratio Table	40
Financial Record	33	Classified Advertising	42

INDEX TO ADVERTISERS ON PAGE 52

Paper TRADE JOURNAL

VOL. 129 **NO. 21**

Entered as Second Class matter at the post office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. Publication Office at Lockwood Trade Journal Co., Inc., 34 N. Crystal St., East Stroudsburg, Pa. Printed in U.S.A. Copyright 1949 by Lockwood Trade Journal Co., Inc. PAPER established Feb. 17, 1899, combined with PAPER TRADE JOURNAL, Nov. 16, 1899. PAPER, established Sept. 21, 1910, combined with PAPER TRADE JOURNAL, February 19, 1926. All rights to the above titles reserved. Contents of PAPER TRADE JOURNAL, including all articles, illustrations, etc., are copyrighted and may not be reprinted except by permission. PAPER TRADE JOURNAL is indexed in *Industrial Arts Index* and *Engineering Index*. Also publisher of LOCKWOOD'S Annual DIRECTORY OF THE PAPER AND ALLIED TRADES.

Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, November 23, 1949.

Russian and Czech Pulps

Correction — Further reliable information on Russian woodpulps is to the effect that 2,000 tons — not 20,000 tons — of Arkangel unbleached kraft is being offered for sale in this market. None will be available until first open water next Spring, however. Last asking price is $70, ex dock. . . . Kaliningrad unbleached sulfite at $77.50/80.00 is seeking a market here.

Czechoslovak woodpulp, reported in *Paper Trade Journal*, November 17 issue, to be selling in Britain, also is being marketed in the U.S., bleached sulfite grade only.

Table I
U. S. NEWSPRINT IMPORTS
(Short Tons)

	September		Nine Months	
	1949	1948	1949	1948
Finland	10,696	8,469	117,628	97,563
Sweden	1,122	1,327	29,471	48,238
Norway	2,582	2,564	26,187	18,784
France	.....	2,133	2,033	22,748
Austria	(a)	228	513	1,157
Netherlds.	.....	.....	508	4,185
U. K.	*3,626	278	34,662	255
Italy	.....	.....	.....	666
Poland	.....	.....	.....	1
Belgium	.....	.....	.....	159
Overseas				
Total	18,026	14,949	211,002	193,756
Newfndld.	9,677	21,269	184,688	163,593
Canada	325,706	313,257	3,036,048	2,849,263
Grand Total	353,409	349,475	3,431,738	3,206,612

(a) Less than one-half of a ton.
Source: NSB, based on Commerce reports.
* Made from Canadian pulpwood in English mills, Bowater-Hearst agreement.

Record Newsprint Consumption

U.S. consumption of newsprint broke all records during October 1949 when the 525 members reporting to ANPA rolled up the greatest tonnage on record for any one month at 399,262 tons. Total estimated newsprint consumption for the month — which includes all kinds of uses of newsprint — stood at 505,395 tons, the first time the total newsprint consumption in the U.S. has exceeded half a million tons in any month.

For the year's ten months, newspapers reporting to ANPA used 3,506,366 tons, an increase of 6.8 percent over the ten months of 1948, and a gain of 20.7 percent over 1947's period. Total U.S. consumption for the year is reported at 4,438,439 tons, an increase of 5.5 percent over 1948's 4,207,536 tons.

Table II
CANADIAN NEWSPRINT EXPORTS
(Short Tons)

	September		Nine Months	
	1949*	1948	1949**	1948
U. K.	12,075	7,397	68,774	44,895
Ireland	1,882	.....	10,001	4,219
Contl. Europe	455	714	9,775	6,392
Medit. Area	.....	62	28	248
Egypt	.....	.....	1,203	1,014
Br. So. Africa	3,136	4,097	42,544	30,724
Other Africa	185	52	4,324	1,165
India, Ceylon, Burma and Pakistan	1,298	728	17,551	11,200
Australia	3,618	8,190	28,386	25,889
N. Zealand	1,009	592	18,993	16,247
Argentina	.....	971	.....	17,417
Brazil	.....	3,180	7,570	21,114
Uruguay	.....	622	8,699	8,457
Other So. Amer.	3,486	3,782	24,865	25,922
Mexico	3,029	2,675	19,622	17,712
Cuba	1,137	1,082	15,862	12,487
British W. Indies	148	29	3,660	3,755
Other Caribbean Area	994	1,215	9,897	11,072
Others	2,427	1,243	20,372	31,956
	34,879	36,631	312,126	291,885
U. S.	329,998	368,920	3,130,823	2,884,500
Total	364,877	405,551	3,442,949	3,176,385

* Includes exports from Newfoundland.
** Includes exports from Newfoundland beginning with April, 1949.
Compiled from Reports of the Dominion Bureau of Statistics.

Newspaper Advertising Gains

For the 52 cities of the U.S., newspaper advertising during September gained 9.0 percent with a total of 197.9 million lines, according to Media records; and for the year's nine months showed a gain of 2.6 percent over 1948's period.

Production Statistics

Canadian production—including Newfoundland — during October amounted to 435,651 tons for a gain of .1 percent over October 1948's 435,337 tons. Mills operated at 100.9 percent of capacity, compared with 106.0 in the previous October. U.S. mill output was 73,350 tons, a gain of 4.0 percent over 1948's October.

In the year's ten months, Canadian mills produced 194,240 tons more than in 1948's, a gain of 4.7 percent. Output of the U.S. mills was 21,829 tons ahead of 1948's period.

Total U.S. supply for the month of October was 442,923 tons from Canadian and U.S. mills, and 18,500 tons from Europe, a total of 461,432 tons, compared with 448,645 tons on October, 1948.

End of October Stocks

Stocks of newsprint on hand and in transit declined to 38 days' supply, for the average of all dailies reporting to the ANPA, a drop of two days from September, 1949, and a gain of 13 days over October, 1948, at projected rate of consumption, according to figures of the Newsprint Ass'n., of Canada.

End of October stocks at Canadian mills were 165,181 tons, a gain of 2,612 tons over September, 1949, and of 24,930 over October, 1948. U.S. mill stocks totaled 13,502 tons, a drop of 1,663 from September, and a gain of 5,773 tons over 1948's October. Combined North American mill stocks at the end of October, 1949, were 178,683 tons, compared with 177,734 tons on September 30, 1949, and with 147,980 tons in October, 1948.

Table III
U. S. EXPORTS OF DOMESTIC NEWSPRINT
(Short Tons)

	September		Nine Months	
	1949	1948	1949	1948
Europe	.....	133	780	901
Central America	269	11	1,298	671
Mexico	1,060	744	8,404	7,627
Cuba	137	198	821	985
South America	534	165	3,467	1,022
China	.....	.....	328	175
Hong Kong	.....	.....	.....	40
Indian and Pakistan	.....	.....	311	2,190
Other Asia	13	138	1,296	1,054
Netherland Indies	.....	.....	.....	7
Philippine Islands	1,524	336	10,775	5,318
Africa	.....	.....	129	363
Others	17	154	1,040	836
Total	3,695	1,899	28,649	21,189

Production Indexes

Ratio of production of unbleached kraft paper to potential mill capacity for that product was 88.6 percent for the week ended November 12, compared with 91.8 percent for the preceding week, and with 102.0 for the corresponding week of last year.

Comparative ratios of U.S. paper and paperboard production to mill capacity, as reported by AP&PA, are:

	Nov. 12	Nov. 5	Nov. 13	Nov. 15	Nov. 16
	1949	1949	1948	1947	1946
Paper	100.1	‡99.3	100.8	109.1	104.9
Paperboard	94.0	92.0	96.0	101.0	101.0

‡ Revised.

Paperboard Production (Tons)*

	Nov. 12	Nov. 5	Nov. 13
	1949	1949	1948
Production	207,837	203,035	190,406
New Orders	182,831	275,815	167,198
Unfilled Orders	444,302	469,423	394,769

Percent of Activity, Current, 94%; Year, 82%.
* Source: NPA.

General Business Indexes

Index of general business activity for the week ended November 12 inclined to 129.0 from 123.6 in the preceding week, compared with 153.3 in the corresponding week of 1948. Index of paperboard production climbed to 203.9 from 194.0 in the preceding week, compared with 187.0 in the corresponding week of 1948.

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Appleton Field Engineering

APPLETON WIRE WORKS, INC.

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Paper TRADE JOURNAL

News of the Week

MILLS

Westvaco Eases Its Pulp Shortage

NEW YORK—A pulp shortage which has limited both the tonnage and quality of paper made at the Luke, Md., plant of West Virginia Pulp & Paper Co., will be eased immediately, company officials stated here on November 21.

The company hopes to improve Luke's competitive position by utilizing the full capacity of pulp mills at its Covington, Va., plant to produce a surplus for use at Luke. Under the new setup the Virginia mill is expected to supply about 40 tons of bleached short fiber pulp daily. Shipments are expected to begin this week.

The paper making capacity at Luke has for several years exceeded its pulp production by about 2,000 tons monthly. To offset this shortage the plant has been bringing in about 1,000 tons of pulp per month from the company's Tyrone and Williamsburg, Pa., mills and making about 1,000 tons of old paper slurry in its waste paper mill. Paper repulped and processed in the Luke mill included waste paper bought on the open market and rejected cup stock and other unsalable white paper supplied by Covington.

In contrast to the pulp shortage at Luke, Covington has been utilizing only about 80 percent of its pulp making capacity since last May, when the need for stock was reduced materially by the shutdown of the No. 1 Board Mill there.

The Covington shipments, combined with Luke's own production and tonnages now being received from the two Pennsylvania mills, are expected to give Luke enough high grade pulp to operate its paper making equipment at capacity and at the same time improve quality.

One immediate effect of the new pulp program at Luke will be a halt in the operation of the old paper plant which now employs a total of about 55 men. This plant will be shut down as long as shipments from the other three mills are great enough to make up Luke's shortages. It is planned to keep the old paper plant in operating condition, however, so that work can be resumed if, for any reason, these shipments fall short. Eventually the company hopes to disband the old paper plant completely.

Pulp to be shipped from Covington will be dried and made into rolls on a large cylinder board machine which has been idle since the shutdown of the board mill there six months ago. In addition to providing Luke with bleached pulp, Covington hopes to turn out additional tonnage of unbleached pine pulp for sale on the open market, if manufacturing and market conditions permit. The board machine is capable of processing about 150 tons of pulp, if operated full time.

Besides partially reactivating the board machine, the pulp program at Covington will place all pulp mills on a 24-hour day, seven-day week basis and step up several related operations, particularly recovery units which have been idle or running only parttime. The program will create a total of about 30 additional jobs in the mill, it was stated.

Buys Tomahawk Stock Block

PORT EDWARDS, Wis.—The Nekoosa-Edwards Paper Co., has recently acquired 45 percent of the stock of the Tomahawk Timber Co., a Minnesota corporation with important cutting rights in the Superior National Forest.

The Tomahawk holdings in the area above Duluth consist of approximately two-thirds jack pine and one-third spruce. Nekoosa-Edwards holdings in the area, which are in excess of 300 square miles, are located northeast of Ely, Minn., about 30 miles west of Lake Superior and with the northern boundary running parallel to and about ten miles south of the Canadian border.

The Duluth, Missabe & Iron Range railroad has a railhead at Forest Center, Minn., almost exactly in the center of the holdings, supplying direct rail delivery to the mills at Port Edwards and Nekoosa. Advantageous freight rates are expected to bring substantial savings in delivery costs. Cutting is already in progress, with first deliveries expected to arrive in Port Edwards and Nekoosa during December.

The Tomahawk company has been operating since 1942. F. G. Kilp, Nekoosa-Edwards chief forester, is vice-president; W. A. Radke, Nepco treasurer, is treasurer; and Harry Deyo, Nepco controller, is assistant secretary and treasurer. John E. Alexander and S. A. Casey have been elected to the timber company directorate, and the other officers and directors are executives of the National Container Corp., and Mosinee Paper Mills Co.

Plan Prescott, Ark., Newsprint Mill

PRESCOTT, Ark.—J. R. Bemis, local business man, reports that a proposed Southwest Arkansas paper mill may produce newsprint and board here.

CALDER ADDRESSES HIS FIRM'S EASTERN DISTRICT REPRESENTATIVES

Alexander Calder, president of the Union Bag & Paper Corp., New York, bids welcome to Eastern district representatives of his company's standard products and flexible packaging sales divisions . . . Both divisions participated in a joint sales conference at the Westchester County Club, Rye, New York, November 3 4.

Mr. Bemis, one of those interested in the project, said it still is in the formative stage.

According to unconfirmed rumors, the plant will be financed and operated by the Dierks-Gordon and Ozan-Gray-Ansonia Lumber Co's. Mr. Bemis is president of the latter firm. It is further rumored that the plant's prime movers are seeking an RFC loan and that options have been taken on areas of land five miles Northeast of this city.

Nevada County residents credit 83-year-old Martin W. Greeson, retired lawyer, lumberman and former Prescott mayor (now bed-ridden) with a major if indirect portion of credit for obtaining the plant—if it materializes.

At Little Rock, Governor Sid McMath commented: "Plans are being formulated for construction of a paper mill in Southwest Arkansas," and added that a tentative location in Nevada County, northeast of Prescott on Highway 67, has been selected.

Kurth Testimonial Celebration

LUFKIN, Texas—Plans for the Ernest L. Kurth testimonial here on December 14 are being crystallized with dignitaries from the Southern states sending their acceptances to committee appointments. Governor Allan Shivers heads an invitations committee comprised of key Southern newspaper publishers, businessmen, educators, and statesmen. General Dwight D. Eisenhower has been asked to make the keynote speech.

Mr. Kurth, president of Southland Paper Mills, Inc., was recently named the South's "Man of the Year."

Southern newspapers honored Mr. Kurth with a testimonial luncheon in 1943 for his work in securing the first newsprint paper mill in the South. He saw the vast possibilities in the new paper process Dr. Charles Herty of Savannah, Ga., was perfecting in 1934 and took the initiative in financing the eight-million-dollar plant, which was finally completed in 1938.

Puget Sound P. & T. Co., Report

BELLINGHAM, Wash.—Puget Sound Pulp & Timber Co., reports that during the first nine months of 1949 its pulp production totaled 73,092 tons against 96,831 tons last year. Pulp sales totaled 66,283 tons this year, in comparison with 96,838 tons last year.

Construction of a $1,250,000 plant for chemical treatment of pulp is expected to be completed next April 1. This new installation is designed to produce a cleaner, whiter pulp than the present unbleached product, and is expected to broaden the present market for the firm's pulp.

K-C Junior Tradesmen Win Diplomas

NEENAH, Wis.—One of Kimberly-Clark's field service division junior tradesmen won two diplomas recently when nine of 14 junior tradesmen completed three weeks of intensive study of on-the-job training. The group were guests at a dinner program given in recognition of their achievements.

MURRAY PORTABLE CHIPPER SHOWN IN ACTION

Chipper manufactured by the D. J. Murray Mfg. Co., Merrill, Wis., in action demonstration when the APPA held a two-day meeting in that city recently . . . The demonstration occurred on a plantation in Southwestern Oneida County on a plantation owned by the National Conrainer Corp. Tomahawk . . . It handles any type of hardwood under four inches in diameter not classed as round wood. The machine will handle 20 cords of wood per hour . . . The log to be cut slides down a chute and into the whirling blades. In a matter of seconds the log is converted into chips that are blown out of the funnel. From the funnel the chips fall into the truck, which will hold eight to 10 tons of chips . . . J. A. Chilsen of the Merrill Daily Herald, who took this picture, says: "We own a piece of land east of the City of Merrill which we have leased to the University of Wisconsin for experimental wood lot purposes. Each year the University conducts a demonstration and the demonstration this year will be held on December 1. The chipper will be brought to the property and demonstrated to the approximately 500 farmers who will attend the demonstration.

The nine who received diplomas were: Kenneth Koss, Kenneth Stuyvenberg, and Martin Boots, electrical department; Jerome Becker, Delb. Zimmerman and Nickolas Zimmer, millwright; Francis Vander Wielen and Frank Spencer, sheet metal men; and John Van Liesshout, pipefitter.

The advisory committee includes Elmer Koss, George Immisch, Joe Seggelnik, John Vanden Heuvel, Wm. Behling, Fred Scheppler, Herb. Sievers and Art McLeod, who is also junior tradesman coordinator.

Craig to Toronto for K-C

NEENAH, Wis. — Hamilton Craig, formerly manager and general manager of the Long Lac Pulp & Paper Co., since 1945, has transferred to the Kimberly-Clark plant at Toronto and will be director of service operations there for the corporation's Canadian units. Mr. Craig has taken part in the development of the Terrace Bay, Canada, program for over four years past.

Camp Adding Big Fourdrinier

FRANKLIN, Va.—Camp Mfg., Co., will install a high speed 226-inch Fourdrinier machine to manufacture lightweight unbleached kraft paper. The machine will complement the 212-inch machine and the 80-inch machine at the mill and provide an outlet for surplus pulp producing capacity at Franklin. Completion is scheduled for October, 1950.

Dexter Recovers Impounded Paper

DEXTER, N. Y.—Representatives of the Dexter Sulphite Pulp & Paper Co. removed approximately 270 tons of paper from the storehouse of the Frontenac Paper Corp. of Dexter as a result of Supreme Court Justice Frank P. Malpass having granted Dexter's application for a vacating of the writ of attachment obtained against this property last July 21 by the state industrial commissioner to guarantee $7,882.99 back wages of Frontenac Co. employes.

Attorney A. Raymond Cornwall appeared for the Dexter company before Justice Malpass and in support of the application for vacating the attachment submitted an affidavit to the effect that the property was erroneously attached last July 22 by the sheriff, it being alleged by the company that it was at that time the owner of the attached paper.

Freight Rates Stalling Mill Relocation

OTTAWA—It is understood here that Scandinavia is interested in transferring a woodpulp mill to the Saskatchewan area of Canada but is delaying plans because of Prairie freight rates in that part of the country.

Sorg Adds Matthews to Sales Force

MIDDLETON, Ohio—The Sorg Paper Co. has engaged Edward J. Matthews in a sales capacity at the mill office here. Mr. Matthews previously was with the P. L. Andrews Envelope Co.

St. Regis' Galvin, Peterson, Pin-Ups

Oswego, N. Y.—Tom Galvin, top pinsman of the St. Regis league, garnered a 578 triple for top honors November 11 amid a flourish of 500 games by his fellow St. Regians. Mr. Galvin helped his score along by posting a 218 finale game.

Seven other St. Regis bowlers pumped the maples for fine scores, including Bill Peterson's 575 which consisted of a lusty 210 middle game. Bill Penrod nudged Johnny Neville when he chipped in with a 555 and a middle game of 210 compared to Mr. Neville's 553 which featured a 214 leadoff game. Others who followed in close pursuit were Earl Gardner with a 545 which included a 206 concluding game, Joe Gothberg with a 540, finishing with a 206 game; Jim Murphy with a 521 and Ed Dreschler's 502 which terminated a busy night in the St. Regis league.

Thilmany Safety Records

Kaukauna, Wis.—Employes of the Thilmany Pulp & Paper Co. on November 1 completed six and one-half months of work with no accidents recorded against them. A total of 1,280,831 man hours were worked during this period, the longest accident-free period ever worked at Thilmany. At the upper mill, there were 300 days without a lost time accident. At the bag mill, 870 days. At the lower mill, 200 days. Nineteen departments worked more than 1,000 days without a lost-time accident. Four departments worked without having a lost-time accident since 1933. Departments that have worked over 1,000 days without accident and the number of accident-free hours are: paper machines, 1,461; beaters, 4,272; rewinders, 1,381; finishing, 1,358; waxing, 1,734; shipping, 1,102; pipe shop, 2,396.

New KVP Employes Feted

Parchment, Mich. — Kalamazoo Vegetable Parchment Co., introduced a new wrinkle in employe relations recently by entertaining at dinners and programs all persons hired in the plant in 1948.

Nearly 260 new employes and their guests attended three dinners given at the Parchment community house, with 50 supervisors and ten executives as hosts. Total attendance was 600. Guests were met by the supervisors, conducted through exhibits of the firm's products, and then introduced to company executives. President R. A. Hayward and Executive Vice-President Alfred Southon addressed the group, both stressing the fact the firm is still growing, and that there are plenty of opportunities for advancement.

Rayonier Honored by NSC

Port Angeles, Wash.—W. E. Breitenbach, resident manager of the local division of Rayonier Inc., disclosed on November 19 that his division had received the National Safety Council's "certificate of achievement" in recognition of "outstanding performance in reducing the frequency of disabling injuries" during the year ended last June 30. This is the second consecutive year that the Port Angeles mill has won this honor.

The Rayonier mills here and at Shelton, Wash., were among the three in Washington state receiving recognition from the national cauncil.

Breitenbach said the mill's safety record now exceeds either both state and national averages for the industry.

Gulf States, NSC Award Winner

Tuscaloosa, Ala.—Its safety record for the year ending June 30 has earned for the Gulf States Paper Corp., a National Safety Council award. During the period covered by the award Gulf States employes worked 2,450,208 man hours with an accident frequency rate of 5.30 per million hours. The average was 11.29 for all pulp and paper mills in the United States and Canada in the contest for the same period. C. C. Coughlin is safety engineer at the mill.

Officials of Gulf States recently stated that their payroll is at an all-time high, with 1,375 employed. This number includes personnel at the expanded plant at Holt, and also the office staff in downtown Tuscaloosa.

Cited by National Safety Council

Newburgh, N. Y.—The local paper mill of the National Gypsum Co., has been cited by the National Safety Council for its outstanding safety record during the past year. In ceremonies held here on November 13, plant personnel received an award certifying to the completion of more than 150,000 man hours without a lost-time accident. The mill was one of 24 plants of the 310 to compete in the Safety Council contest that completed the period from July 1, 1948, to June 30, 1949, with a perfect record. W. T. Cabe, plant manager, accepted the award which was presented by Merrill C. M. Pollard, company safety director.

Stevens Mill Resumes Production

South Hadley, Mass.—The Stevens Paper Mill is resuming operations after a three-month shutdown, operating on a reduced scale, with one of the two paper-making machines "up."

The Stevens Mills manufactures paper used in electric installations. It operates two mills in Westfield and the one in South Hadley Falls, formerly the Hampshire Paper Co. The Hampshire mill was acquired by Stevens in 1940. The plant shut down on July 30, when an unusually heavy inventory was on hand and orders were curtailed.

Keefe New T. & H. Roadman

Boston — Tileston & Hollingsworth Co., has appointed Daniel T. Keefe as a junior salesman and assigned him to Connecticut territory, working out of the company's New Haven office under the direction of Raymond G. Mather.

Acquires Pittsburgh Corrugated

Rittman, Ohio — The Ohio Boxboard Co. has purchased the Pittsburgh Corrugated Paper Box Co., Pittsburgh. As of November 15, these properties began to be operated as the Pittsburgh Corrugated division of Ohio Boxboard Co. Ohio Boxboard Co. management personnel will control this division, working with the present Pittsburgh Corrugtaed staff.

Sales manager of the division is T. J. Charlesworth, formerly manager of the Pittsburgh district sales office. Production manager is Harry S. Hemple, formerly manager of the Ohio Boxboard Co., Cuyahoga Falls, Ohio. General manager of this new division is C. E. Carpenter, senior vice-president of Ohio Boxboard.

IP Promotes Clean Mill

Palmer, N.Y.—The Safety Committee of the International Paper Co., Hudson River Mill met on November 5 in the Mill's conference room here. W. D. Maxim, IPCO division manager, was the principal speaker, his subject being "Good Housekeeping." The meeting opened a month's campaign within the mill to stimulate interest in improving and maintaining cleanliness throughout the plant. The mill has been divided into seven major sections for inspection, rating and comparison.

Attending the meeting were the mill manager, superintendents, supervisors, foreman, sub-foreman, safety wardens and guests.

Waste Reclamation Costly

Buffalo, N. Y.—Suart E. Kay, manager of manufacturing at the International Paper Co., plants in Tonawanda and Niagara Falls, testifying at a hearing in the State Office Building called by the International Joint Commission to remedy pollution in boundary streams, stated that his company has spent $1,782,000 on anti-pollution and waste reclaiming projects in the Niagara Frontier.

Mr. Kay testified that about 63 tons of wood, celluloid and clay is dumped into the Niagara River each day. "It is too fine to reclaim and much of it is silt, just as we normally get it in the water," he said.

Simplex Installing Wickes Boiler

Palmyra, Mich.—The Simplex Paper Corp., on November 11, received a Wickes Type A 225 hp., boiler with water walls and superheater, ordered a year ago from the Wickes Boiler Co., Saginaw, Mich. Weighing 75,000 pounds and holding 20,300 pounds of water, the boiler will replace an older one of 155 horsepower installed in 1922. Cost of the new boiler is reported to be $23,987, but with stoker, stack and installation totals $35,000.

Nunn, Camden Kiwanis Head

Camden, Ark. — James P. Nunn, personnel director for the International Paper Co., here, is the new president of the Camden Kiwanis Club.

Fraser's Newcastle Mill Readying

NEWCASTLE, N.B.—The Fraser Co's., Ltd., new sulphate mill here is expected to start production early in December. It is designed for a daily capacity of 120 tons of unbleached sulphate pulp and the product will be shipped to the company's plant at Edmundston for further processing.

Work on the site at Newcastle was commenced in the fall of 1946 and the mill's foundations were laid in the spring of 1947. Finished cost will be considerably above the original 1946 estimate of four million dollars.

Ralph B. Murchie, former sulphate superintendent at Edmundston, will be mill superintendent here.

K-C Quarter-Century Club in 3d Year

NEENAH, Wis.—The Kimberly-Clark Quarter-Century Club, membership 532, is now in its third year of existence.

The Kimberly mill leads in the number of club members who have continued on the payroll since 1924 or earlier. Niagara was second with 99. Niagara Falls, 88. Neenah main, 75; Lakeview, 51; Badger-Globe, ten; Appleton-Atlas, six; Field service, four; Memphis, two; Bonifas Lumber Co., and Long Lac Pulp & Paper Co., one each.

C-Z Ups John A. Ream

WEST LINN, Ore.—John A. Ream, personnel supervisor at the Crown Willamette paper mill here for many years, has been named a field representative for the Crown Zellerbach Corp. retirement plan committee. Succeeding Mr. Ream as head of the personnel department at the West Linn division of Crown Zellerbach will be D. S. Coney.

George LaHusen is assistant personnel supervisor at West Linn.

Driscoll to Reflectal Corp.

HUDSON FALLS, N.Y. — Henry J. Driscoll, formerly manager of the Scutan branch of the Union Bag & Paper Co., has accepted a similar position with a new concern known as the Reflectal Corp., with main offices and business in New York. The new firm manufactures reflective insulation and plans to enlarge its force as orders increase. Operations were started November 1.

KVP Men City Commissioners

PARCHMENT, Mich. — Charles F. Christy, vice-president in charge of sales of the Kalamazoo Vegetable Parchment Co., and John H. Sinclair, head of the company's health, welfare and safety section, were re-elected to the Parchment city commission on November 8.

Scott's Prouty Addresses SAM

PHILADELPHIA—D. A. Prouty, retail sales manager of the Scott Paper Co., addressed student chapters of the Society for the Advancement of Management in this area on November 16 at a meeting at Drexel Institute of Technology. Mr. Prouty's subject was "Selling as a Career." The Drexel chapter entertained students from the University of Pennsylvania, St. Joseph's College, Temple University, and Pennsylvania Military College.

Beeman, C. of C. President

GLENS FALLS, N.Y.—Lyman A Beeman, president of Finch, Pruyn & Co., was elected president of the Glens Falls Chamber of Commerce at a meeting of the directors on Nov. 18. Mr. Beeman, a past president of the St. Regis Paper Co., was named president of Finch, Pruyn & Co. on January 10, 1949, to succeed the late Maurice Hoopes. He is also a director of the First National Bank.

Lectro Dryer for St. Regis Plant

OSWEGO, N. Y.—St. Regis Paper Co. (multi-wall bag division) on November 14 received a permit for installation of a foundation and slab for a Lectro dryer housing at its plant in Mitchell street. The work, on which Angelo Castaldo has the contract, will cost $2,412. The new equipment which will be housed in the building is for the purpose of reducing humidity.

Cole, Dickinson Sales Prom. Mgr.

HAMILTON, Ont.—Arthur P. Cole has been appointed sales promotion manager of John Dickinson & Co. (Canada) Ltd. Mr. Cole was formerly in the export sales department of the company's London office. He will assist the Canadian organization in sales and customer service for the specialty papers manufactured here and in England.

Wood, "Credit Builds Sales" Speaker

NEW YORK—Joseph L. Wood, assistant treasurer of the Johns-Mansville Corp., and treasurer of the Sale Executive Club of New York, was among several executives who participated in the "Credit Builds Sales" meeting of the club, held in conjunction with the New York Credit Men's Ass'n., at Hotel Roosevelt on November 22.

Jenkins to Marvellum Co.

HOLYOKE, Mass.—Alvan D. Jenkins of New York has joined the sales staff of the Marvellum Co. Mr. Jenkins was a salesman for the American Tissue Mills here for some years and more recently for Fabricon Products Co., Detroit. He will handle Marvellum sales in the New York district.

National Gypsum Ups Davidson

BUFFALO, N. Y.—William T. Davidson has been named to the newly-created position of general traffic manager by the National Gypsum Co. Mr. Davidson has been with National since 1937.

Ladies' Day at AWP Mill

HOLYOKE, Mass.— Members of the Granby Woman's club toured the Linden division of the American Writing Paper Co., as part of their meeting recently.

ASSOCIATIONS . . .

Urge Dropping Tax

OTTAWA — Publishers of Canadian daily newspapers from coast to coast met with Finance Minister Douglas Abbott here to urge the removal of the eight percent sales tax on newsprint.

Headed by A. F. Mercier, president of the Canadian Daily Newspapers' Ass'n., the delegation pointed out that daily newspapers are being discriminated against in this connection since other media do not pay the tax on their paper supply. Among these are Canadian magazines, week-end publications without news, etc.

Among the conclusions of the brief presented to the Minister, the delegation noted the following: (1) Canada is the only country in the Commonwealth in which there is a sales tax charged on the newsprint consumed by daily newspapers. Nor is there any Federal sales tax charged on newsprint in the United States. (2) The removal of the tax on Canadian magazines and week-end publications without news sections, coupled with low imposts on foreign-made color process plates, is an unseemly discrimination in the application of the tax which adversely affects all newspapers and many advertisers. (3) The circulation of American news magazines printed upon taxfree newsprint is, in effect, unfairly subsidized competition which has made sizeable inroads into the national advertising revenues of Canadian newspapers. (4) At various times of national emergency, the newspapers of Canada have acquiesced and even joined in measures not strictly in conformity with sound principles and practices of normal times. They did not oppose the reimposition of a high sales tax newsprint during the depression in 1931 when there was a deficit of $100,000,000 in the federal budget. This was departure from principle in an emergency.

The brief ended with the statement "that the grounds upon which the present tax was imposed in 1931 are completely invalid in 1949 at the very peak of employment and national prosperity."

New Eng. TAPPI Meet

SMITHS FERRY, Mass. — The New England Section of TAPPI met at Toto's on Route 5 between Holyoke and Northampton, Mass., at 7:30 p.m., November 18.

Harry G. Specht, vice-president and general manager, Eastwood-Nealy Corp., and Peter S. Sinclair, vice-president, Sinclair Co., Holyoke, Mass., were guest speakers.

Mr. Specht chose as his subject "Is Peace Possible?" and dwelt on his recent trip through Europe, relating some of his experiences and outlining the conclusions he has come to in re-

gard to the future. He also touched on his visits to three large paper mill manufacturing companies and expressed their viewpoints in regard to the paper machines of the future.

Mr. Sinclair also visited Europe this summer and highlighted the places he visited and the old friends whom he met.

P & T A Membership Charges

CINCINNATI—Charles H. Plogman is now associated as Western Sales Manager with United Board and Carton Corporation with headquarters at Springfield, Ohio.

H. E. Mapes, general manager of the Mapes Consolidated Mfg. Co., Griffith, Ind., has succeeded W. A. Schurmann, deceased, as a member of the Paper & Twine Assn. E. B. Jessup has just become a member of the Association, succeeding Don Kneipple with the Marathon Corp., Mr. Kneipple having left for the Southwest due to ill-health.

NAWMD Boston Meet

BOSTON — The organization meeting of the National Ass'n., of Waste Material Dealers, Inc., New England Division, will be held at the Statler hotel on December 7.

Harry R. Woodward of the Train Smith Co., Chelsea, Mass., and Robert Feinburg of the David Feinburg Co., Medford, Mass., are co-chairmen of the unit, which includes Maine, Vermont, New Hampshire, Rhode Island, Massachusetts and Connecticut.

All commodities will be discussed at the business meeting, to which members as well as non-members are being invited. James T. Flannery of James T. Flannery Co., Jersey City, N. J., president, and Clinton M. White, New York, managing director of NAWMD, will attend. In addition to discussions of commodities, the gathering will be posted on current conditions in the industry and activities of the national association.

Zinke Heads GIA

NEW YORK — At the annual convention of the Gummed Industries Ass'n., Inc., at the Greenbrier hotel, White Sulphur Springs, W. Va., Arno L. Zinke, vice-president of the Mid-States Gummed Paper Co., Chicago, was unanimously elected president, succeeding Frank O'Neill, president of the Paper Mfr's., Co., Philadelphia, who has just completed two terms of service in that office. Henry W. Stark, Jr., president, Rexford Paper Co., Milwaukee, was unanimously designated vice-president. Henry W. Stark, Sr., father of the new vice-president, served the Association several years ago for two terms as president. Philip O. Dietsch was again designated managing director. He has rounded out some fourteen years of service with the gumming industry.

Other members of the board of directors, elected to serve for one year, are: Roth F. Herrlinger, Gummed Products Co., Troy, Ohio; E. B. Luck, Wortendyke Mfg., Co., Richmond, Va.; R. A. Maish, Dennison Mfg., Co., Framingham, Mass.; T. H. Mittendorf, Hudson Pulp & Paper Corp., New York; F. A. O'Neill, Paper Manufacturers Co., Philadelphia; W. L. Shattuck, Adhesive Products, Inc., Albany, Calif.; and Nathan Warshaw, Atlantic Gummed Paper Corp., Brooklyn, N. Y.

The educational and advertising campaign in which the sealing tape division of the association has been engaged for two years will be continued for 1950.

Additionally, a direct mail campaign, which will distribute some 150,000 pieces of literature to users and non-users of gummed sealing tape, will be a part of the 1950 work of the sealing tape division.

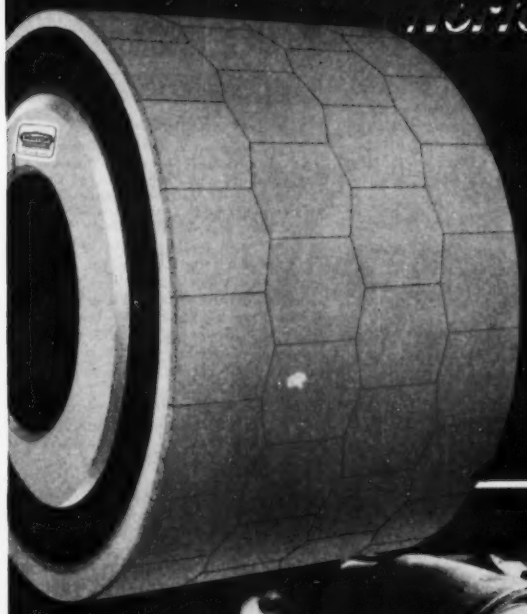
Officers of the Southern Division of the American Pulp & Paper Superintendents Ass'n, Inc., at the October 24-26 meeting in Monroe, La . . . Seated, left to right: Charles H. Reese, Nekoosa Edwards Paper Co., president of the national Association; Philip J. Hannan, Southern Advance Bag & Paper Co., retiring chairman; Otha Winningham, National Container Corp., first vice-chairman . . . Standing, left to right: John J. Thompson, Southland Paper Mills, second vice-chairman; and Andrew F. Downey, St. Regis Paper Co., chairman . . . Auguste D. Levert, Gaylord Container Corp., third vice-chairman was not present for the sitting.

"Deep South" Supt's. Meet

MONROE, La. — The Southern Division of the American Pulp & Paper Mill Superintendents Ass'n., Inc., held a highly successful fall meeting here on October 24-26. Headquarters were at Hotel Frances but some of the meetings were at the Virginia hotel. Registration approximated 200 persons. For complete details, see *Paper Trade Journal*, November 17 issue, page 64.

Banquet at meeting of the Southern Division of The American Pulp & Paper Mill Superintendents Ass'n., Inc., Hotel Frances, Monroe, La., October 25.

Have You a Problem in any of these Norton-Served Fields?



NORTON ENGINEERING SERVICE IS READY TO HELP YOU

PULPSTONES—Available in the correct combination of abrasive, grit size, hardness and structure to meet *your* mechanical pulp requirements.

NORTON

SAW GUMMING WHEELS—Available in vitrified or resinoid bond and several types of ALUNDUM abrasive to keep your rip, slasher and other saws in top-notch shape.

KNIFE GRINDING WHEELS—The cool, fast cutting action of the sensational 32 ALUNDUM abrasive is making it a favorite for all kinds of knife sharpening jobs.

ROLL GRINDING WHEELS—Wheels of CRYSTOLON abrasive in vitrified, shellac and resinoid bonds to meet the requirements of all types of paper mill rolls.

REFRACTORIES—High temperature CRYSTOLON BRICK save money in boiler settings because of their long life, resistance to slag penetration and to abrasion.

POROUS MEDIUMS—Filter plates and diffusor tubes of carefully controlled permeability. Made of fused alumina (ALUNDUM) they combine strength and chemical stability.

DEBARKING NOZZLES—Made of Norton Boron Carbide (trademarked NORBIDE), the hardest material made by man, their life is many times that of other nozzles.

OTHER NORTON PRODUCTS for the PULP and PAPER INDUSTRY: ALUNDUM Laboratory Ware; ALUNDUM Non-slip Tiles, Treads and Aggregates; CRYSTOLON Axe and Knife Stones; Abrasive Papers and Cloth (Products of Behr-Manning Division)

NORTON COMPANY, WORCESTER, MASS. • NORTON COMPANY OF CANADA, LTD., HAMILTON, ONT.

Hudson River Technical Ass'n.

PALMER, N. Y. — Thomas L. Harrocks was the principal speaker at an educational meeting of the Hudson River Technical Ass'n., held on November 19 to discuss machine coating. The association is comprised of executives and department heads of the local branch of the International Paper Co. Mr. Harrocks stated that about 1936 the Consolidated Water Power & Paper Co., began producing coated paper under a process invented by Peter Massey. The success of this venture, Mr. Harrocks said, started a race by other concerns to develop coater that would not infringe upon the patents of Consolidated. His remarks were confined chiefly to the process as used at the local plant. He explained how the coating mixture is prepared, how its various factors are controlled and why given coating results in good or bad finished paper. The possibilities of machine coating and its outlook for the future were also discussed.

A. B. Copping read a letter of appreciation from Edward Hutchins for the gift presented him upon his retirement from the International Paper Co. Following this, O. P. Beyer, mill manager, presented V. P. Edwardes, a recently retired member, with a gift from the association and paid tribute to him for his many years of loyal service with the International Paper Co.

M. R. Wells was in charge of the educational portion of the program.

Stanlar, Hudson Valley TAPPI Speaker

SOUTH GLENS FALLS, N. Y. — The importance of mechanical power transmission in governing the economical and efficient operation of any industrial plant was stressed on November 17 by William Stanlar, mechanical power consultant for J. Rhodes & Sons of Wilmington, Del., in a talk before the Hudson Valley Branch, Empire State Section of TAPPI, at a dinner meeting at the Village Inn here. More than 75 attended the session. Mr. Stanlar also discussed direct-coupled motors, worm gear units, herringbone gear units, motorized gear units and high starting torque.

Mr. Stanlar was accompanied to the meeting by Carl Wright of Rhodes & Sons, and C. N. Hagar, Jr., of Plattsburgh, chairman of the chapter, presided.

The primary requisites, Mr. Stanlar listed as a realization that mechanical power transmission is a definite engineering subject and not similar to an auxiliary.

West Coast TAPPI and Supts. Meet

LONGVIEW, Wash.—The Pacific Section of TAPPI and the Pacific Coast Division of the American Pulp & Paper Mill Superintendent's Ass'n., Inc., have scheduled a joint one-day meeting for December 6 at the Monticello hotel. The business meeting of the Superintendents will be held at the Elks Club.

Carl Fahlstrom, Longview Fibre Co., Longview, is chairman of the meeting and is in charge of the technical program. S. E. Hazelquist, Weyerhaeuser Timber Co., pulp division, Longview, and F. R. Armbruster, Great Western Division, Dow Chemical Co., Seattle, are in charge of other arrangements.

The technical program, also scheduled for the Elks Club, is to cover such subjects as the operation of a corrugation plant, cost reduction in a converting plant, how Camas (Crown Zellerbach) handles quality control, materials handling at Longview and Fibre, and the preconditioning of paper at the Everett Pulp & Paper Co.

The business meeting of the Superintendents will include the annual election of officers for the division as well as other business matters.

A social hour and reception is planned for 5:30 p.m., at the Monticello hotel, followed by dinner there at 6:30.

Miami Valley Supt's Meeting

FRANKLIN, Ohio — The Miami Valley Section of the Miami Pulp & Paper Mill Superintendent's Ass'n., will meet at the Manchester hotel, December 1, with dinner at 7:00 p.m.

This will be a discussion type meeting, with Harry E. Hadley of the Gardner Board & Carton Co., Middletown, Ohio, and F. L. Zellers of the Chillicothe Paper Co., Chillicothe, Ohio, serving as discussion leaders.

A large group of operating men is anticipated to discuss primarily mill cleanliness, materials handling and spare equipment storage. Specific problems such as felt washing, suction roll cleaning and other general mid cleaning problems will be discussed.

G. R. Kavanagh Was There!

NEW YORK — When the American Pulp & Paper Mill Superintendent's Ass'n., reported the Deep South meeting of that group (*Paper Trade Journal*, November 17, page 64) the name of G. R. Kavanagh of the Wallace & Tiernan Co., as a member of the panel on "Slime Control in Kraft Mills" was inadvertantly omitted. Mr. Kavanagh was present at the panel and was an active and helpfully constructive participant in its proceedings, an Association spokesman states.

Spectacular Membership Record

NEW YORK—The Salesmen's Ass'n., of the Paper Industry, bulleting its members on November 15, said: "Our West Coast membership is picking up, in fact increased 100 percent this week, when Ted Pell, representing the Eastern Corp. at San Francisco, dropped in and applied for membership. Previously Dr. Merchant at Chino carried the ball for us in the wide open spaces. Mr. Pell's address is 260 Kearny street, San Francisco 7."

Burke Clan Addition

NEW YORK—Tom Burke of the Sulphite and Glassine Associations has just welcomed a new grandson, John Burbidge Burke, born on Election Day to Mr. and Mrs. Thomas G. Burke of Rye, New York. Mr. and Mrs. Burke now have five grandchildren.

Metropolitan TAPPI Meeting

NEW YORK — John Cornell, editor-economist, addressed the Metropolitan Division, TAPPI, at Fraunces' Tavern on November 14. Attendance at the meeting totaled 25 members and guests.

MARKETS . . . . .

The Paper Market

Report Prepared by the Paper Committee of the National Ass'n. of Purchasing Agents, under the supervision of Chairman Edgar E. McCulley, Courier-Journal Lithographing Co., Inc., Louisville, Ky. November 9, 1949.

Paper and board production figures snapped back in August and September from the very low July report. But wood pulp and other fibrous material inventories at paper and board mills declined further. With the uncertain duration of strikes and their ultimate effect on the economy, and the distinct possibility that lower pulp prices originating in import quarters may not be too far in the future, it is not hard to understand some lack of enthusiasm for building inventories at current values.

The dollar value of business in the industry can be classified as good, when measured by commonly accepted yardsticks. Using the 1935-39 average as 100, the Federal Reserve Bulletin listed production index numbers for all paper and paper products, for the seven months January-July, 1949, at 163, 158, 151, 146, 144, 143 and 128, respectively.

Those look like nice increases but, in the same months, profits for the industry showed an opposite trend. Break-even points were much lower in 1935-39 and were measured in terms of a dollar considerably different from today's dollar.

Members of the paper and related industries who are shooting par or better profitwise are those who have found mechanical ways to get more production with less labor more quickly than some competitors.

WOOD PULP—*By H. L. Weber, Fibreboard Products Co., Inc., San Francisco, Calif.*

Supplywise pulp seems to be tightening up. This is particularly true in the bleached grades and in groundwood pulp. There still appear to be adequate supplies of unbleached grades.

Pricewise, the situation, while still somewhat confusing, has at least tentatively arrived at some stability. Immediately following devaluation, foreign unbleached grades and groundwood dropped rather sharply, but within a week or ten days had recovered to a somewhat stable condition. In some instances, present prices for foreign pulps are below those of domestic and Canadian producers. It does not appear too probable that these discrepancies will be corrected before the end of the year if the present large demand for pulp continues. A great

GIVE YOUR WAX-COATED PRODUCTS

new brilliance...new toughness ...new sales appeal

BREAD WRAPPERS

FROZEN FOOD BOXES

SOAP WRAPPERS

CAKE BOARDS

Already, manufacturers are giving wax-coated products better protective qualities . . . longer shelf life . . . more eye appeal with "ALATHON"
TRADE MARK

Try blending microcrystalline or paraffin waxes with new Du Pont "Alathon" Polythene Resins and see the improvement. Coatings of "Alathon" and wax have better flex life and show lacquer-brilliant finishes. They're tougher, harder, more grease- and smear-resistant and far less tacky.

Which means these coatings give your paper products extra sales appeal—longer shelf life, freedom from blocking and better all-round protective qualities. They catch the buyer's eye quickly and start selling right away.

FOR MANY PAPER PRODUCTS

Coatings for bread wrappers, cake boards, soap wrappers, frozen foods wraps of all kinds—these and many more are greatly improved with new Du Pont "Alathon" Polythene Resins. Print shows up brighter and clearer. And the brilliance of the finishes far exceeds what you would expect from ordinary wax coatings.

ELIMINATES WAX DEPOSITS

Blends of "Alathon" and wax go on smoothly—there are no lumps or deposits to stick to the product. And "Alathon" Polythene Resins make it possible for you to use softer waxes where you never could before. They transform these soft, amorphous waxes into tough, flex-resistant, glossy coating materials.

STILL ANOTHER USE

In addition to using them as wax modifiers, you can also coat paper with *pure* "Alathon" Polythene Resins. They are water-, chemical- and solvent-resistant, low in M. V. T., tasteless, odorless and non-toxic. Paper coated with "Alathon" stands up where paper alone fails.

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***Write today for free booklet** on Du Pont "Alathon." Filled with facts, suggested applications and methods of using this new paper coating material. Du Pont will be glad to work with you on applications.*

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POLYCHEMICALS DEPARTMENT

(Consolidation of the Ammonia and Plastics Departments)

E. I. DU PONT DE NEMOURS & CO. (INC.)
WILMINGTON 98, DELAWARE

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*

deal of the slack in pulp prices has been taken up, and it appears that future reductions may encounter substantial resistance.

Use of pulp is still on the increase and there is no indication yet of any letup in that condition. This does not necessarily mean that there is a shortage but more that there is a better supply-demand relationship than a few months ago.

KRAFT PAPER—*By T. H. Treadwell, W. C. Ritchie & Co., Chicago, Ill.*

A month ago we reported a definite firming of the kraft market, with price increase of ¼c per pound and the mills who had been granting 5 percent discount had withdrawn it. Deliveries were then scheduled on a 6- to 8-week basis with customers again restricted on tonnage allotments.

Prices are still firm, with deliveries extended to about 8 weeks.

FINE PAPERS—*By E. E. McCulley.*

Last month's optimism for present and future fine paper business, to date, remains more mental than factual. Mill shipping promises have been slightly extended on the record; however, places are found in production schedules for rush emergency production and delivery where real need exists.

There is extreme reluctance to return to prewar ideas of inventory stocking of all current grades, colors and sizes that formerly were thought necessary properly to service consumers. The unwillingness to do this stems from the same reasoning that has tempered most industry thinking and has, no doubt, contributed to the maintenance of an orderly market that permits retreats to safer price levels without the spectacular and destructive fluctuations of the comparable period after World War I.

It is interesting that one operator felt such general conservatism left a distinct opening for a bolder approach and accordingly stocked to the extreme. The ability to deliver from stock promptly on almost any demand did very gratifying things for sales and profits, and added an imposing list of new customers and expanded old customers' business very handsomely. He justifies that course with the statement that, if all of the industry had done as he did, he would have retrenched instead of expanding. It is an equally interesting speculation as to what would have happened to prices if all of his competitors had followed that policy.

The merchant pressure on rag mills for a return to the old 3 percent discount is increasing. He does not like having to give his customers 2 percent and get only 1 percent at the mill.

BOOK PAPER—*By Ralph N. Betts, American Education Press, Inc., Columbus, Ohio.*

Book paper production is down materially from the peak year of 1948. This situation is clearly borne out by the 30 percent average reduction in pulp imports and 50 percent increase in pulp exports in 1949 over 1948. Of the total pulps imported for book grades in 1949, Canada is by far the largest supplier, furnishing some 83 percent. Sweden follows with 12 percent, the other 5 percent being split between Finland and Norway in the order mentioned. As the situation shapes up at present, it appears that the last-quarter production of this year may approach that of 1948. This is due, to both increased demand and inventory depletion.

Prices are stiffening in the book grades. Waste paper prices are beginning to show some strength, following a prolonged period of oversupply. The cheaper grades of book papers still seem to be creating the greatest demand, the better grades being easier to obtain in almost any desired quantity.

NEWSPRINT—*By T. A. Corcoran, Courier-Journal and Louisville Times Co., Louisville, Ky.*

Price continues to be the chief topic of discussion in newsprint circles. Canadian producers, apparently backed by their government, are maintaining a solid front against any adjustment at this time.

However, overseas tonnage is being offered regularly at less than the standard contract price of $100 delivered at New York. Recently there have been offerings of 5,000 tons at $92 delivered at any U.S. port and another of 500 tons at $87.50. The low bid on the Government Printing Office newsprint for the fourth quarter was $98.86, compared to the regular contract price of $100.50 for Washington, D. C.

It appears that devaluation will cause Canada to lose overseas tonnage, particularly in England and Australia, making this tonnage available to the U.S. market.

U.S. *consumption* continued high in September, amounting to 451,301 tons —an increase of 4.4 percent over last year. It is quite probable that there will be a slight reduction in October due to the coal and steel strikes. And, the reduction in November could be quite sharp if the strikes are permitted to continue very far into that month.

Total U. S. *supply* in September amounted to 451,130 tons—an increase of 3.6 percent over the same 1948 month. Users' stocks at the end of September represented 48 days' supply, compared to 50 days a month earlier, and 37 days a year ago.

BOXBOARD—*By Stuart Edgerton; United States Rubber Co., New York City.*

Quality: Quality of board is improving steadily, due to better selection of waste, better mill equipment, and the spur of competition.

Supply, Demand and Prices: Board production reached a new record during October. Backlog of unfilled orders remains substantial. Producers are taking advantage of this situation by increasing prices wherever they can. Many buyers are still buying short, and not allowing their future tonnage requirements to help build up the backlog which is aiding the movement toward higher board prices.

PAPER CONTAINERS—*By Lee R. Forker, Quaker State Oil Ref'g. Corp., Oil City Pa.*

There is no indication of any change in availability or price for paper containers since our October report, with the possible exception of paper drums and paper cans involving metal heads or lids where a shortage exists due to the steel strike. The demand for this style package has increased, reflecting the lack of availability of steel containers, and certain producers now are allocating production to the contract or regular customers.

The production of kraft paper remains high compared with 90 days ago, reflecting a strong seasonal demand forcing mill production almost to capacity.

Inventories are being built of paper and paper containers to meet the demand deferred by lack of production during present labor difficulties.

Shortage of coal has not been reported as a limiting production factor, although the usual October and November boxcar shortage is interfering with normal scheduling and shipment in certain areas.

WEST COAST CONDITIONS—*By Horace Duckenfield, Metropolitan Life Insurance Co., San Francisco, Calif.*

A general résumé of the situation in the paper trade in Northern California would indicate that there has been practically no change over the report of last month.

The conclusion of the prolonged warehouse strike in San Francisco has definitely eased deliveries from stock in the Bay district.

Reports from practically every phase of the paper industry say that the supply of all categories of paper and paper goods from the mills is excellent and the assumption is that most of the mills might have been able to build up their stocks through the Summer and, thus, might be showing a fairly well-balanced inventory of their own.

Prices throughout the industry seem to be fairly stable.

CANADIAN CONDITIONS: *By J. F. Stephenson, Kraft Containers, Ltd., Hamilton, Canada.*

Very little change has taken place in the Canadian paper situation over the past few weeks. Labor demands are still bringing pressure on the mills and it is only a question of how long they can maintain present prices if labor does not become more reasonable.

Most mills are running near full production and so long as this condition exists, they can weather the cost storm. Should requirements slacken off and mills reduce production, very few could show a profit under today's conditions.

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WORLD AFFAIRS . . .

Realism Requires World Federation

By IRA D. WALLACH*

Editor's Note: Apropos the accompanying article, Tom O. Griessemer, editor of "World Government News," makes the following comment:

"This is to supplement our telephone conversation this morning concerning an article on world federation written by Mr. Ira D. Wallach of Gottesman & Company.

"I called you because I have been very much impressed with this article. It offers, I think, an excellent means of bringing to the attention of businessmen a solution to the foremost problem facing Americans at this critical juncture of our history—world peace. Never before has the business community had such a tremendous stake in the successful maintenance of peace. Never before has the threat of war so clearly meant the destruction of business values and the American way of life.

"As you will recognize from my position, I see a great many articles on the subject of world federation. I have not frequently had the opportunity to see one which, in my estimation, so well presents the case for world government in such simple and lucid terms."

Until recently speakers and writers on world federation started off by describing what was meant by a federation of the world and then proceeded to mention the steps to be taken to achieve it. Such considerable progress has been made during the past year, however, that it is now appropriate to examine the progress and then proceed to a discussion of federation. No longer can it be said that world government sounds good on paper but can never be accomplished. Too much has already been accomplished to make this argument valid — realism is the other way round.

Who would have imagined only a year ago that 105 members of the House of Representatives and 22 Senators would sponsor a resolution which would make it "a fundamental objective of the foreign policy of the United States to support and strengthen the United Nations and to seek its development into a world federation"? Who would have imagined that at a hearing before the House Foreign Affairs Committee (a majority of which committee sponsored the resolution), organizations with over 17 million members would have testified for the resolution and that supporting statements would have been submitted by many leaders in the public eye, including 5 State Governors? What is this thing that has moved 22 State Legislatures to take action and has made the people of Connecticut and Massachusetts vote in referenda 11 to 1 and 9 to 1 in favor? What vision has caused the General Convention of the Protestant Episcopal Church to call upon all "God-fearing and peace-loving people" to support world federation?

In the United States, over 40,000 persons have become members of United World Federalists with chapters over the country. World government groups have sprung up throughout the world, affiliated together in the World Movement for World Federal Government which has held three annual assemblies with representatives from many countries. The French and Italian constitutions permit these countries to join a world federation. Such leaders as Spaak of Belgium, Nehru of India, Romulo of the Philippines (President of the United Nations General Assembly), Sforza of Italy, Churchill and Bevin of England, MacKenzie King of Canada and Boyd-Orr, Nobel Peace Prize winner, have all recognized that world federation is the solution of the world's problems and have taken active steps to see it come to pass. These are not starry-eyed dreamers but practical men of the world.

The world is only waiting for the people and government of the United States to lead the way. It is to this country that the world turns for leadership and it is only this country that can give such leadership. That is the challenge of our time. In the recent words of President Truman, "The real dangers confronting us today have their origins in outmoded habits of thought, in the inertia of human nature, and in preoccupation with supposed national interests to the detriment of the common good." It is apparent that the President awaits only the time when public opinion evidences that enough people in this country realize the situation the world is facing and what must be done to effect a cure. To bring that about is the present job of the world federalist organizations.

If the world continues to follow the dictates of nationalism rather than the rules of law and government, we will inevitably end up with the conflict which anarchy in international relations has always produced. The world has become small in space due to technological advances, the airplane, the atom and methods of communication. Bodies of water and land no longer keep people apart. It is as if the people of the world were in a crowded subway train, all nations elbowing and pushing. Points of conflict throughout the world are numerous, any one of which could start a world conflagration.

True it is that the United States is presently the most powerful nation on earth. But does that mean anything so far as safety is concerned? We are sitting on a powder keg. The United States does not decide whether there will be war or peace. The answer rather comes from nations across the seas. We may say that we are a sovereign nation and that we want under all circumstances to keep the rights which supposedly go with sovereignty, but these are idle words. The truth is that conflicts arising elsewhere in the world will draw us into war just as certainly as we were drawn into the last two world wars. It is immaterial that we may agree that we should have engaged in those wars—it is patent that we did not have a free choice.

Let us observe what war and the preparation for war means to us. To dwell upon what war would mean is only to repeat the obvious. Atomic bombs, germ warfare, rockets, make clear pictures in our minds. Contemplate the 220,000 people killed at Hiroshima — think of the prospective destruction of our schools, hospitals and churches into which so much effort has gone. Of concern, also, are the necessary but unpleasant concomitants of war, the loss of personal liberties, the compulsory military and civilian service, the draft of property, the limiting of the right to speak one's mind and the suspicion which arises in tracking down fifth columnists. All of these will come with actual warfare.

But even the preparation for war, a necessity to protect ourselves in the existing world order, will continue to have drastic repercussions. It is essential to have large and well-equipped armed forces, an adequately-trained reserve, a self-sufficient economy with a stock pile of strategic materials, manufacturing plants in the least accessible places and possibly underground, shelters for civilians and all the other things that go along with protection in the case of war with modern weapons. All this requires government direction of our citizenry and our business. Aside from that, preparation for war must be paid for, which means higher taxes, less spendable income and fewer good things in life. Or it means deficit spending, devaluation of the dollar and inflation. To prepare properly, we must also build up and support our allies abroad. For a business man, this is a bleak prospect. It is similarly bleak for everyone else. There is no need of talking of the rights of labor or of bargaining between labor and industry, all of that goes by the board when we have government centralization. Everybody will be in the same regulated boat.

Fortunately for mankind, there is a way out. It is world federation. Federation has succeeded in the past in solving just such situations. The difficulty in recognizing the solution now is due to the fact that the conflicting units are larger in size than ever before. We are now dealing with nations rather than families, villages, cities or states, but the principle is the same. It is that peace can be assured between coordinate potentially conflicting political units only by the designation and empowering of a government stronger than such units.

* Vice-president, Gottesman & Co., New York.

Take, for example, our own United States. The Articles of Confederation constituted the colonies into a league which did not have the power necessary to keep the peace. When the Constitutional Convention met in Philadelphia in 1787, the same arguments were raised with respect to a strengthened national government that are being raised today with respect to a strengthened international government. At the beginning of the Convention, agreement seemed hopeless but compromises were made until sufficient of the states and the people of those states were convinced that federation was worthwhile. To this analogy it is usually answered that the colonies were a unified whole, having successfully won a war with England. This theory, however, has been completely exploded by Carl Van Doren's book, "The Great Rehearsal." The colonies were not the happy bedfellows which are commonly pictured. Instead, they were continuously in conflict over borders, trade and currency and differed among themselves on language and religion. There were threats and armed exchanges. But it was these conflicts and issues that made federation necessary and possible. In like manner, successful federations have arisen in other countries, including Switzerland, Canada and Australia, made out of dissimilar and not similar groups. It is only one step removed to a world federation, an entirely natural step with the historical background of a world becoming smaller.

Once the government and the people of this country decide to take leadership towards world federation, the goal can be achieved in any one of a number of ways. Let us assume that it will come about by the representatives of the United States to the United Nations spark-plugging a convention to revise the Charter to give the U.N. the powers necessary to strengthen it into a world federation. The final governmental structure would be the result of compromises at the convention and need not be prejudged here. Now it is only necessary to say broadly that the U.N. would have a legislature truly representing the peoples of the world on a basis more equitable than the present one nation-one vote method, that the executive arm of the U.N. would be able to enforce decisions without a veto, that the U.N. would have the predominant armed forces in the world stronger than any nation or combination of nations, that it would have power to tax independent of the nations and would have jurisdiction over individual citizens for violation of international law instead of having to go to war with the nation where the wrongdoers happen to reside. The existing nations of course would retain control of their local affairs and have police forces to maintain local peace.

Thus we are faced with alternatives, either the world continues to go along its present course with inevitable disastrous consequences or it adopts a course towards world federation which may, if achieved in time, make for peace. It is more realistic to take a road which is going in the right direction whether or not the end will be reached than it is to follow a road which must lead to assured conflict. That is the practical approach — it is good business.

But the question is always asked: What about Russia? To this I answer: What about the United States? Are we prepared today to grant a world federal government the powers that are necessary to keep the peace? When our government and our people are prepared to do this, then we can truly ask for a decision from Russia. The Russian Government may be against world government today but we will never know whether it will be against world government tomorrow or the next day until we make the offer. We have observed in the recent past many twists and turns in the Soviet's foreign policy and perhaps at the same time that we accept world government, the Soviet Government will consider it to be in its own interest to do the same. In any case, progress lies in but one direction—there is nothing to be lost and everything to be gained—we will never know if and when it will succeed until it is tried. Since world federation is the only possibility of maintaining peace for the future, realism requires that we take that choice rather than an alternative which holds out no such hope. If it be given to man to establish permanent peace, consider the huge expenditures now being made for armaments throughout the world which could be devoted to constructive instead of destructive uses.

Let us be forward looking, and in the words of Carl Van Doren, "History is now choosing the Founding Fathers of the world federation. The man who could be one of that group, and does not seek to be, has lost the noblest opportunity of his lifetime."

SUPPLIERS . . . . .

Minneapolis-Honeywell Regulator Co., Minneapolis, has advanced seven of its men to new sales positions. Kent L. Wilson has been named manager of the newly formed manufacturers' division. He will assist A. H. Lockrae, vice-president in charge of the heating controls division and will be concerned primarily with manufacturers of heating equipment. T. S. Carley, who has been Detroit branch manager will succeed Mr. Wilson as head of the Honeywell-Brown office in Dallas. Karl Schick, former southwestern regional manager, is rejoining M-H after a year as a distributor for several companies in the Dallas area. He will be sales manager of the company's gas controls division. J. A. DePuy has been promoted to managership of the Detroit office, succeeding Mr. Carley. Jack Richardson, who has been manager of the industrial division's sales department in Detroit, will succeed Mr. DePuy as the Cincinnati Honeywell-Brown branch manager. James Dunlap, who has been with the Toledo office, has been named industrial division sales manager in Detroit, and Harry Merkel, of the Pittsburgh branch office, has been transferred to Toledo in charge of industrial sales.

OLIVER UNITED FILTERS

Oliver United Filters Inc., New York, has named C. W. Crumb (left), former manager of the Chicago office, as sales analyst . . . Glen G. Reed (right), who has worked out of the Chicago office for some time past, succeeds Mr. Crumb as manager of sales in the Chicago territory.

American Cyanamid Co's., chemical director, Dr. Norman A. Shepard, speaking on November 18 at the Rhode Island dinner of the 25th New England Conference at Hotel Statler, Boston, set forth the many ways in which research is helping New England industry and urged the region to be alert in taking advantage of new developments. He said New England can best speed expansion of its industries by increased use of the region's research facilities and by providing venture capital to put research results to work in building plants, products and profits.

Solvay Sales Division of the Allied Chemical & Dye Corp., New York, is distributing a new caustic soda safety and instruction chart for persons and companies using or handling caustic soda. The chart contains suggestions for the protection of employes, precautions in unloading tank cars, how to handle frozen caustic in tank cars, and general first aid information. This is the third in a series of Solvay Precaution Charts, the first two covering chlorine and caustic potash.

KARL A. OBERREICH

—recently added to the sales staff of the Appleton Woolen Mills, Appleton, Wis. . . . Mr. Oberreich comes to the firm with 19 years of experience in the paper industry.

ELECTRO-HYDRAULIC DE-BARKER

The problem faced by W. J. McGoldrick, electronics engineer and vice-president of the Minneapolis-Honeywell Regulator Co., was how to turn off the barking of Major, his golden retriever. Major had a habit of greeting the world at 4:30 A. M., and his master seldom felt like getting up so early. The fotos show how applied science resulted in quiet mornings . . . (1) Charged atmosphere. Major has no idea that his master is pondering an electronic device to curb barking . . . (2) Two-timers! Mr. McGoldrick (left) and John Wilson collaborate on gadget designed to silence the unsuspecting Major. (3) Modern improvement. Before retiring, Major seems a little smug about the fancy wall decoration. He still has to find out that noise in the doghouse will operate a valve on water pipe, producing an affective stream . . . (4) De-Barker in action. The barking stops in a hurry, as Major learns about electronics. The device shuts off automatically when he decides that silence is golden . . . (5) Current asset. Mr. McGoldrick smiles in comfort as the flashing light confirms what his ears tell him—namely that major has learned that "silence is golden."

General Electric Co., Schenectady, N. Y., has named seven executives to new positions in the apparatus department. They are: Neil Currie, Jr., from manager of manufacturing to administrative assistant to the general manager; Ernest E. Johnson, from manager of engineering to manager of engineering, large apparatus divisions; Carl A. Salmonsen, from manager, aircraft gas turbine divisions, to manager of manufacturing, large apparatus divisions; Byron A. Case, from assistant to the manager of engineering, to manager of engineering, small apparatus divisions; Frank T. Lewis, from manager of manufacturing, aeronautic and ordnance systems divisions, to manager of manufacturing, small apparatus divisions; Clarence H. Linder, from assistant manager of manufacturing to assistant to the general manager; and C. W. LaPierre, from assistant manager, aircraft gas turbine divisions, to manager, aircraft gas turbine divisions.

Holyoke Machine Company, Holyoke, Mass., has named L. H. Perry to head its hydraulic department. Mr. Perry is widely experienced in all phases of water power development including the design, testing and supervision of domestic power units as well as the design of many foreign installations. He was formerly with James Leffel & Co., Springfield, Ohio, as mechanical engineer.

Brown Instruments Division of the Minneapolis-Honeywell Regulator Co., will open an intensive two-week course in the application of controlling and measuring instruments to manufacturing and processing of pulp and paper for industrial instrument technicians from customer mills, at the Brown School of Instrumentation, Philadelphia, on December 5. M. L. Ladden is head instructor.

Brown-Hutchinson Iron Works, Detroit, has elected Raymond J. Shillum a member of the board of directors and vice-president in charge of sales. Mr. Shillum was sales manager directing the alloy sales division. He has been with Brown-Hutchinson two years and was formerly with the metallurgical and heat treating division of the Ford Motor Company for twenty-five years.

American Car & Foundry Co. has named W. E. Lunger assistant vice-president in charge of production, with headquarters in New York. He was formerly district manager of the Huntington, West Virginia plant. Succeeding Mr. Lunger at Huntington is J. E. Koontz, now assistant district manager of that plant.

Process Industries Engineers, Inc., Pittsburgh, has appointed W. A. Coyle as Western New York district manager. Companies which will be represented through the western New York office are the Patterson-Kelley Co., International Engineering, Inc., Warren Steam Pump Co., Hetherington & Berner, Inc., B. H. Hubbert & Son, Inc., Gruendler Crusher & Pulverizer Co., Tri-Clover Machine Co., Waukesha Foundry & Machine Co., and Rietz Mfg. Co. In addition to the Buffalo and Niagara Frontier, Mr. oyle will serve Rochester, Corning, Jamestown, Erie, and the surrouding area from his office, which will be located at 6578 Broadway, Alden, New York.

NEW E. H. SARGENT & CO. CHICAGO PLANT

A new and modern building for the Chicago offices and plant of E. H. Sargent & Co., has been completed. T. M. Mints, president of the 97-year old company, reports . . . E. H. Sargent & Co., with offices and plants in Chicago, Detroit and Dallas, manufactures and distributes scientific laboratory instruments, apparatus and chemicals.

Borden Co., New York, recently honored William F. Leicester, a leader in the development of the casein glue industry, for 25 years of service with Borden. Mr. Leicester is vice-president of the concern's Chemical Division.

Babcock & Wilcox Tube Co. reports that the strike at the Beaver Falls, Pa., plant was settled November 14. Operations at the plant were resumed immediately. The company's plant at Alliance, Ohio, manufacturing welded carbon steel tubing, was not affected by the strike, operations being maintained without interruption.

LINK BELT UPS TWO

Eugene P. Berg (left), formerly general superintendent, has been appointed to the newly created position of assistant general manager of the Link-Belt Pershing Road plant in Chicago; and Richard Moyer, (right), formerly superintendent of the steel shop, has been appointed general superintendent, manufacturing department . . . Other appointments at the plant include Stanley F. Zale as superintendent of the steel shop; Ray Witt, supervisor of time study and methods department; and Harold Hartman, chief inspector.

American Car & Foundry Co., New York, has named T. F. Wilson manager of the operating supplies division of the purchasing department. Mr. Wilson has been with ACF since June 1916. He replaces G. E. Thompson, resigned.

Boler Petroleum Co., Philadelphia, is marketing Parafflex waxes, a new line of paraffin formulations developed for the paper and packaging industry to eliminate the need for using additives to paraffin wax.

American Brake Shoe Co., New York, has elected Harry C. Platt vice-president of its engineered castings division and William H. Starbuck vice-president of its Kellogg division.

General Electric Co., Schenectady, N. Y., has named D. S. MacDonald assistant to the manager of the gear motor sales division of the small and medium motor divisions.

Harry Eldridge, vice-president, F. C. Huyck & Sons, Rensselaer, N. Y., has been elected to the Albany Chamber of Commerce directorate to fill the unexpired term of the late Francis E. Eldridge.

Westinghouse Mid-Century Review and Forecast Forum

Early in 1948, Charles A. Scarlott, editor of the *Westinghouse Engineer*, conceived the idea that the midpoint of the century was a logical time to pause and consider engineering progress. Where are we heading; what have we accomplished in the twentieth cen-

tury now half gone? For the Mid-Century issue of the *Engineer*, Westinghouse engineers, pioneers and authorities in their fields, have written of achievements they have seen, and in many cases been responsible for. From these vantage points they have looked to the future to estimate, if possible, trends of accomplishment yet to be.

A group of about 40 editors of trade papers and newspapers was invited to visit the Westinghouse plant at East Pittsburgh, Pa., on November 10 for the presentation of these writings by the authors. The program is shown below, together with brief resumes of the various papers:

The first was *"Why a Mid-Century Review and Forecast Forum"* by A. C. Monteith, vice-president in charge of engineering.

"Steam Turbines" by D. W. R. Morgan, vice-president, South Philadelphia Works, Essington, Pa., was presented by C. B. Campbell, manager, South Philadelphia Works.

The opening paragraph of Mr. Morgan's paper on steam power generation gives a brief summary of the achievements in this field during the past half century, as follows:

"In this country the steam turbine and the twentieth century arrived together. The first turbine for cenral station service began operation early in 1900, in the plant of the Hartford Electric Light Co. It was a 2,000-kw 1,200-rpm condensing turbine, far exceeding in capacity any unit previously built. Now, 50 years later, the modern high-speed machines currently going into service have 50 times this capacity, and even bigger machines of slower speed have been running for many years."

Single shaft turbines operating at 3,600 rpm and delivering 150,000 kw are predicted for the near future. Turbines larger than 150,000 kw will probably be cross-compounded with an 1,800 rpm unit to use the large volume exhaust from the 3,600 rpm machine.

In the more distant future we may expect turbines to operate with steam at 1,200° F and 3,206 psi and having a thermal efficiency of 40 percent. These turbines will probably be built to produce upwards of 240 kw per unit.

The gas turbine, in point of development, stands today at about the same position which the steam turbine occupied at the beginning of the century. Improvements which we may expect during the next few years should offer a bright future for this machine.

"A-C Generators" by C. M. Laffoon, manager, A-C engineering, transportation and generator division, East Pittsburgh, described the manner in which the design of A-C generators has kept pace with advances in turbine design. More recent improvements include development of high pressure hydrogen cooling systems for large generators. In the future much improvement may be expected in the development of synthetic insulating materials as well as improvements in metallurgy which will allow substantial increases in output for a given size unit.

"Lamps and Lighting" by Samuel G. Hibben, director, applied lighting, lamp division, Bloomfield, N. J., described the growth of electric lighting from the carbon filament lamps used at the beginning of the century, which produced only four lumens per watt, through the present-day incandescent bulb producing as high as 36 lumens per watt, on to mercury arc and fluorescent lights which yield up to 100 lumens per watt. Although the advancement in efficiencies of these light producers has been remarkable we still have a long way to go before we approach the theoretical maximum of 614 lumens per watt.

"Switchgear" by J. B. MacNeill, manager, switchgear and control division, East Pittsburgh, described and showed pictures of some of the crude switchgear in use during the early part of the century and then compared them with some of the modern metal-clad gear now in use. In no branch of the electrical industry has there been such outstanding improvements as in the design and manufacture of switchgear.

Only a year ago the maximum interrupting capacity of a circuit breaker was raised from 3½ million kva to 10 million kva. Two years ago lighting arresters were produced for a 500 kv experimental transmission line. The previous maximum had been 287 kv.

Even the present high interrupting capacity of 10 million kva will probably be inadequate within a few years. Short circuit figures of 12 to 15 million kva are now being considered. When these high capacities are required the industry will be able to produce the necessarily equipment.

"Transformers" by F. L. Snyder, manager, transformer division, Sharon, Pa., tells how in 1900 the transformer had already been developed to the point where it operated at an efficiency of 98 percent, required very little maintenance and had a reasonably long life. Therefore, it would seem there was not much to look forward to in the way of major improvements. Yet looking back over the past 50 years we find there have been many improvements.

"Maximum operating voltages have been increased about sevenfold; maximum capacities by 70 times, weights per kva have been reduced to one-seventh. Reliability has been improved immeasurably. Even efficiencies have been bettered; a new transformer has less than half the losses of its ancestor of 1900.

All this has come about without fundamental change in transformer principle, but in numerous betterments in iron, insulation, tank constructio, cooling, protective systems, and the many other things that go to make up a transformer.

In the future it is expected that maximum voltages will be increased from 287 kv to 500 kv and higher, if necessary. Capacities should be materially increased from the present 145,000 kva in a single unit. Large high voltage power transformers will probably be forced oil cooled instead of self cooled. Eventually gas cooled transformers will supplant the others.

"Motors and Controls" by L. R. Ludwig, manaer, Buffalo divisions, Buffalo, N. Y., told of the improvements in metals and insulatory materials which have allowed the great increases in power per unit of weight and volume in electric motors. Mr. Ludwig pointed out the benefits that have been brought about by standardization among manufacturers. He also described the great increase in reliability that is being built into the new Life Line motors.

"Industrial Electronics" by W. C. Evans, vice-president, electronics and X-ray division, Baltimore (presented by F. S. Mabry, manager, electronic and X-ray division), sketched the use of electronics for control of machinery such as paper machines and rolling mills and described the use of radio frequency heating for plastics, etc.

"Research" by J. A. Hutcheson, director, research laboratories, East Pittsburgh, described the development and growth of the research department from one or two individuals to a staff of over 500 engineers and technicians. Dr. Hutcheson stressed the fact that the primary function of the research department is to discover fundamental knowledge which may be then developed and applied by other departments in the organization.

"A Review and Forecast Summary" by Mr. Monteith, concluded the program.

When the sessions at the plant were completed the entire group was taken to the Pittsburgh Athletic Club for refreshments, followed by a dinner, at which Gwilym A. Price, president of Westinghouse, was the principal speaker.

In addition to E. P. McGinn, industrial editor of *Paper Trade Journal*, editors and editorial representatives of the following publications were in attendance: Aero Digest, American Machinist, Automotive Industries, Electric Light & Power, Electrical Manufacturing, Electrical World, Electrified Industry, Electronics, Factory Management & Maintenance, Food Industries, Industrial Heating, Industry & Power, Iron Age, Iron & Steel Engineer, Machine Design, Machinery, Materials & Methods, Metal Progress, Mill & Factory, Plant Engineering, Power, Power Generation, Product Engineering, Purchasing News, Steel, Steel Processing.

Also, the following news services and newspapers: Associated Press, United Press, International News Service, Pittsburgh Post-Gazette, Pittsburgh Sun-Telegraph, and Wall Street Journal.

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Zein as a Calender Size for Paperboard

By
CARROLL R. KEIM
Chemical Division, Corn Products Sales Company, Chicago, Illinois

Zein, the alcohol-soluble and water-dispersible corn protein fraction, has been considered in the past for paper mill applications in tub and calender sizing and as a clay coating adhesive. With early grades of zein, the difficulty in preparing water solutions of high protein content made such uses relatively impracticable, but the advent of chemically-modified zein has reawakened interest in its use in the paper industry.

One phase of the present investigation has been concerned with an appraisal of zein's value as a calender size on various types of paperboard. Successful application has resulted in commercial adoption of the process. This report is intended to summarize the results of mill runs to date and to project potential uses based on these investigations. The boards treated include solid manila, patent-coated solid manila, patent-coated newsback, bleached manila newsback, newslined chip, groundwood, jute and bogus bristol, ranging from 9 to 24 points.

Properties of Zein

High solids solutions of chemically-modified zein are heat stable and have low viscosities at elevated temperatures. When these solutions are used on the calender, it is possible to obtain deposits as high as one pound of solids per thousand square feet of board. Such weight pickups are unusual in the art of calender treatment and make possible the exploitation of the properties of relatively heavy zein films. The attributes of primary interest are grease resistance, water resistance, insolubility in various organic materials, scuff resistance, gloss and film strength.

The zein solutions considered in this report were made either with caustic soda and dry rosin size, or with ammonia and ammonium resinate and were usually applied at 17½% solids, although the range of 8 to 20% solids was covered.

Grease Resistance

Calender application of zein increases the resistance of the board to penetration of oils and greases. For example, using turpentine as a test solution, penetration time has been improved on 15-point jute liner from one second, untreated, to 30 seconds, treated. In one particular case, the turpentine resistance of a 22-point board, treated on the patent-coated side, was increased from 24 seconds, to 900 seconds.

Water Resistance

Where resistance to water is of no particular concern (for instance, in sealing prior to lacquering), the caustic solutions are used. The ammonia solutions, through volatility of the alkali, attain a high degree of water resistance on drying, and consequently are recommended where water resistance is required in addition to grease resistance. The presence of even small amounts of fixed alkali in the ammonia solutions will reduce water resistance.

Insolubility

Since zein is insoluble in many common lacquer solvents, calender treatment has proved extremely valuable in increasing the coverage and the gloss of a variety of solvent as well as water-borne top coatings. By the application of a zein coating at the calender, it is often possible to save two to four pounds of top coating per thousand square feet. Not only is a material saving effected, but coating machine speeds can be increased as well. A heavy zein application on dense boards will prevent penetration of hot waxes; consequently where controlled penetration is desired, diluted solutions of zein may be used to reduce the amount of pickup. Applications from dilute solutions will result in better uniformity and higher finish of gloss inks.

Gloss and Scuff Resistance

Through a high pickup on the surface and better finishing action on the last stack, the gloss and "slip" of the treated board are improved. On jute liner, the heavier deposits have been observed to increase the abrasion resistance considerably.

Film Strength

The bursting strength (Mullen) of zein-treated board is usually increased by about 10%. Although the use of zein solely for this purpose has not yet proved economical, it is an added value when the treatment is used primarily for other features.

Preparations (See Table I)

In preparing these water solutions, the zein is slurried in cold water, followed by the oleic acid. In Formula 1, the rosin size is next added and then the caustic solution; in Formula 2, the ammonia should precede the Dresinol. After the alkali is uniformly incorporated, the mixture is heated by live or jacketed steam to 130 F or higher to speed solution and facilitate the escape of entrapped air. When solution is complete, the wax emulsion is added; and Formula 1 is diluted with hot or tap temperature water to 50 gallons and Formula 2 to 57 gallons to give approximately 17½% solids.

Table I
Formulations Used

	1	2
Zein (through 50 mesh)...	50 lb.	50 lb.
Oleic acid (a)	1 gal.	2½ gal.
Dry rosin size (a)	10 lb.	.....
Dresinol 205 or 215 (b)...	.....	2½ gal.
Water	25 gal.	35 gal.
28% (26°) Aq. ammonia (c)	.....	2½ gal.
10% Aq. sodium hydroxide (c)	2 gal.	.....
Alkali-stable wax emulsion.	1 gal.	2 gal.
Dilution water (including condensate)	15 gal.	9 gal.

(a) Light grades where color is important.
(b) 45% solids ammonium resinate emulsions (Hercules Powder Co.).
(c) Quantity of alkali required varies widely with local conditions; final pH should be 9-10.

Notes:
(1) No preservatives are required in these formulas.
(2) Viscosity usually stable for a week or more.
(3) Formula 1 used where water resistance is not important.
Formula 2 is highly water-resistant.

Notes on Preparation

1. Heat is preferably applied slowly, especially in preparing Formula 2. Elapsed time is about 30 minutes for the batches described above; larger amounts require additional time. Formula 1 can be prepared more rapidly than Formula 2.

2. The final solutions are completely smooth and free of particles and are clear or only slightly hazy before the addition of the wax.

3. The wax emulsion acts as a defoamer and entrapped air rises to the surface shortly after the agitation is stopped.

4. Solutions of lower concentrations should be prepared as above and then diluted with water to desired concentration.

Machine Operation

These solutions may be applied to the sheet from one, two or three water-boxes. They operate easily at normal water-box temperatures; for example, at 140 F the viscosity at 17½% solids is approximately 50 centipoises. The solutions are infinitely dilutable with water, thus facilitating the wash-up of preparation tanks, cir-

culating systems and water-boxes.

Some foaming may occur in the box, but it is not of the type that interferes with operation. Either gravity feed or pumping to the boxes has proved successful, and optimum conditions are found where there is good circulation across the water-box and where air jets are used to maintain a dry edge. Using the recommended formulations, picking and wrapping of the calender have not been experienced under a wide variety of conditions. Three factors that contribute to freedom from such difficulties have been demonstrated to be the following:

1. The zein "plates out" or is partially precipitated from solution upon contact with the sheet under pressure. This action releases water and the zein sets without going through the tacky stage that is observed when applied to a finished sheet. This appears to occur more readily on highly sized, low pH sheets, but operation has been normal on neutral and even alkaline sheets.

2. The oleic acid, which is primarily present as a plasticizer, seems to be released to act as a lubricant during application.

3. The use of wax emulsion provides added insurance against sticking.

In order to attain maximum efficiency from the treatment, it is desirable to use two boxes rather than one. Using these formulations in two boxes, the pickup will be from ¼ to a little over 1 pound of solids per thousand square feet, depending upon the sheet itself and the point of application. The greater portion of total weight is deposited from the first box, but the balance applied from the second box is very important for sealing. It has been found that the second box contributes little or nothing to bursting strength, but results in oil resistance several times that imparted by one box. This same effect has been observed in applying lacquer coatings, which cover much more uniformly when the two-box treatment is used.

Apparently the major part of the sealing and cementing down of the fibers is done by the first box, but the small deposit from the second box is required to complete the job. Thus, when the greatest continuity of film is desired, it becomes almost imperative to use a second box. The water-boxes may be located at any convenient place in the stacks, but the pickup will vary with the position.

Conclusions

Water solutions of zein have been successfully applied to paperboard from calender water-boxes. With solutions of 15-20% solids, single-side deposits as high as one pound per thousand square feet can be obtained on most types of paperboard.

Treatment greatly reduces penetration of subsequent coatings and increases gloss and resistance to oils, greases, waxes, inks and water as well as improving scuff resistance and bursting strength.

The author wishes to acknowledge the kind cooperation of many paper mills in making this report possible.

Modifying Paper Characteristics Through Chemical Additives

By

WALTER B. MOREHOUSE

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Introduction

The general theme or objective of this discussion is to consider materials which when added to, or incorporated into paper, change the physical characteristics of that paper. I am sure that each of us who has spent any appreciable amount of time in a paper mill has had experience with changes in physical characteristics through the addition of chemicals. Sometimes the changes were desirable and sometimes quite the contrary was true. In fact, many of us can recall changes in physical characteristics which had nothing to do with added chemicals and changes which we would like to "unchange" if we had the ability to do so. These unwanted and ofttimes costly changes are a part of the vast number of variables which occur in the manufacture of all types and grades of paper and paper board. This is partly due to the nature of the raw material used and partly due to the variables of the paper machine itself.

From the foregoing it is quite obvious that I approach this theme with some fear and trepidation.

Papermaking Variables

A few months ago I had the opportunity of hearing Dr. Borje Steenberg of the Swedish Forest Products Laboratory, Stockholm, speak at the New York State College of Forestry, on "The Effect of the Paper Machine on Paper Characteristics." While I have not seen his paper in print, I believe it will become available, eventually. His main point was that there are variables in the paper machine operation which affect the finished sheet to our advantage and we are not always able, or do not possess the knowledge, to take advantage of the factors involved. He pointed out that the synthetic fiber portion of the textile industry has been taking advantage of the fact that when a fiber is stretched during its formation period, as in rayon and nylon, for example, the tensile strength of that fiber is greatly increased in the "machine" or lengthwise direction. There is a compensating loss in the cross direction. He also pointed out that a well formed sheet of paper stretched during the drying operation would have greater strength in the stretched direction. He stated that this information has been put into commercial practice in Sweden by the manufacturers of bag paper who slit the paper at the wet end to enable them to take advantage of stretch which develops in the narrow strips in a more uniform manner than it would on the full width of the paper machine.

There were many other points which were discussed by Dr. Steenberg, but I am referring to this one incident merely to point up the fact that we sometimes have variables in the finished paper which have little relationship to the latent possibilities of the sheet or chemicals which might be added in an attempt to impart certain characteristics.

Raw Materials

In building a sheet of paper, our primary raw material is cellulose. The very fact that this material is a partially refined, naturally occurring substance, presents us with considerable variation at the outset. Through the years, we have learned a great deal about this natural product and we know the general characteristics which we must have in our fibrous raw material to develop certain characteristics in the finished paper. We know, for example, that if we want the maximum possible strength, we must utilize long fibered cellulose as our starting raw material. We also have learned that there are no shortcuts in obtaining high quality sheet, if it is to be held to rigid specifications. We have also learned that the addition of chemicals to the fiber mass as it is being prepared for the formation stage on the paper machine produces a variety of results depending upon the materials added, as well as how they are added. We know that certain mate-

Presented at a recent meeting of the Maine-New Hampshire group of the New England section of TAPPI.

rials will stay with the fiber very well during the formation stages and certain other additives will stay with the fiber only with great persuasion. We have also learned that some of these materials may be modified so that they will have an affinity for the cellulose by some of the newer products which are now becoming available from our chemical laboratories. Above all, we have learned that to build a sheet to certain definite specifications when we are utilizing added chemicals as well as our main raw material, cellulose, we must give careful study to the specifications, to determine whether or not they are within the realm of possibility. Also, we must give careful consideration to the selection of the proper additive materials if we are to reach the goals which have been set.

Technical Control

It goes without saying, that I am a firm believer in the chemical laboratory as an important part of the modern paper mill. However, we are forced to the conclusion that many times the laboratory-mill relationship is not all that is to be desired, and that our experimentations often are nothing more than trial and error. I well recall my first experience as a technical man in a paper board mill. In school we had been taught that the correct way to size paper using rosin size and alum, was to first add the rosin size. After it had been well dispersed throughout the fiber mass, alum was added to precipitate the rosin in the form of aluminum resinate on the fibers. The result was water resistant paper. In the mill referred to above, we were making a plaster board paper, sometimes called lath paper, which had to be fairly well sized. This sheet was made in a continuous beater and I soon discovered that they were adding rosin size first, followed by alum, and then followed by rosin size again. After observing that this was the reverse order of addition to the accepted best practice, I was about to make an issue of it with the superintendent, when I also observed that the paper being made was very well sized, and remained so throughout the run! In defense of my educational background, I have to admit that the best technique is to: (1) add rosin size, (2) add alum, (3) use batch system of stock preparation. However, commercial practice has proven that adding alum ahead of the size may be satisfactory in certain instances.

Chemical Attraction

From time to time in this discussion the terms anionic, cationic and nonionic will be mentioned. A brief definition of these terms may be helpful at this point. Anionic materials have an affinity for positively charged particles or surfaces. Cationic refers to materials which have an attraction to negatively charged particles. Nonionic refers to material which exhibit no attraction or repulsion to or from either positively or negatively charged particles. Nonionic materials may even prevent deposition or interaction of anionic or cationic bodies. It might also be well to state here that cellulose, as it is generally encountered in the manufacture of paper is considered to be negatively charged.

Rosin Size

Of all the products which Nopco Chemical Company produces for the paper industry, I presume that the waterproofing agents would be of greatest general interest to papermakers. Of these materials, undoubtedly rosin size is the most generally used internal waterproofing agent. We produce a dry rosin size of excellent solubility, causing a minimum of foam and having excellent efficiency when precipitated by alum. Its color does not suggest its use in white or light colored papers. However, it is one of the most economical means of sizing paper and paper board that is available today. The addition of 1½ percent of this material on the dry weight of the stock will give a water resistance of 25 as measured by the Cobb test.

We make another new and rather interesting rosin size which may be considered to contain 85 percent free rosin size. This product is an outgrowth of some of our war work. This free rosin size is particularly effective in hard water areas. Some cases have been reported where one pound of this type of size will produce the equivalent water resistance of three pounds of ordinary rosin size.

In addition to imparting water resistance, rosin sizing may be expected to:

1. Adversely effect sheet formation due to the development of foam.
2. Slightly increase paper stiffness.
3. Slightly decrease mullen and tensile strength.
4. Improve the retention of dyes, pigments and other chemical additives, which are often used.

Wax Emulsions

Probably the next most commonly used waterproofing material as a beater size, as well as a surface size, is emulsified wax. This can be obtained in anionic emulsified form as well as in a nonionic emulsion. (It is also possible, as I will mention later, to have wax present in the cationic emulsified form.) It has been demonstrated that pound for pound emulsified wax will impart greater water resistance than will rosin soap. This is probably due to the fact that the wettability of the two products shows that wax is less readily wet by water than is rosin. The use of wax alone or wax mixed with almost any portion of rosin size will:

1. Greatly diminish foam and thereby aid sheet formation.
2. Increase the softness of the sheet.
3. Markedly lower the mullen and tensile strength.
4. Impart greater water resistance per pound added than rosin size.
5. Improve the dimensional stability of paper.

For the internal application of a wax emulsion it is my belief that one should select an emulsion with the finest particle size obtainable, less than one-half micron. Also, for maximum retention the emulsion should be reactive with the precipitant, alum, or in other words, be anionic. Our experience indicates that best results are obtained when the wax emulsion is diluted to less than 5 percent solids before it is added to the beater. When this is done, the order of addition of wax size and alum does not seem to be critical.

Cationic Wax Emulsions

There is another type of wax sizing which may be classed as cation active which, although not in commercial use today, has some interesting possibilities. During the last phase of World War II, our laboratory was given a sample of a paper box which was heavily sized with wax and was also wax coated. The customer wished to utilize this waste material if the wax could be handled. The solvent extractable wax content of this particular carton was 28 percent on the fiber weight. By the use of hot water and a cationic dispersing and fixing agent, we were able to make well formed hand sheets from this stock, and the extractable wax content of the laboratory hand sheets was 27 percent on the fiber weight. The sheet was very soft and raggy with very little strength. However, it is extremely interesting to note that the relatively large amount of wax present could be emulsified, distributed and fixed onto the fiber with an efficiency approaching 100 percent. It is also interesting to note that this slurry of stock prior to forming the sheet, could be thrown into a container of ice water without any wax separating to the surface. This simple test, incidentally, is a fairly good measure of the bond between properly dispersed wax and fiber in an aqueous system.

Ex-O-Wax Treatment

As many of you know, we have a patented system for the removal of wax by emulsification and washing, known as the Ex-O-Wax treatment. (U. S., Patent Number 2183259.) We also have recently been granted another patent covering the steps described above utilizing a cationic emulsifying and fixing agent. It is not difficult to imagine that the utilization of this treatment could considerably reduce the cost of wax as an internal sizing agent without loss of the characteristics gained by the use of a ready prepared emulsion.

Sodium Stearate Size

Another sizing agent which is not too well known, nor very generally used, is the sodium soap of a saturated high titre fat. Such a product might be considered a commercial grade of sodium stearate. This product when added to the beater and precipitated

with alum in the same fashion as when rosin size or wax emulsion is used, gives water repellency comparable to that produced by these agents. This type of sizing material is quite generally used in the manufacture of photographic printing paper. Here, the relative chemical inactivity of the product with materials found in the developing and printing solutions is of prime importance. Rosin size fails badly on this score and wax size has serious disadvantages. For this application, it is essential that the iodine value of the fat used in making the soap be 5 or less. To obtain such a low iodine value usually requires the use of triple pressed stearic acid.

Another interesting, yet rather limited use of this type of product, is waterproofing asbestos papers. The metallic salts formed with alum and this type of size seem to be of an irreversible nature. As most of you may know, asbestos fiber in aqueous suspension slowly liberates alkali during the beating operation, making it virtually impossible to permanently depress the pH below the neutral point during the beating operation. Usually, when a large amount of alum is added to the beater the pH will drop to 4.0 or 4.5, but it will gradually rise again to 10.0 or higher as the alkali which is liberated neutralizes the acidity of the alum. While the reaction between the stearate size and alum is not completely understood, it is believed that once the pH has been lowered to 4.0 to 5.0, a reaction takes place which does not revert when the system is thrown over on the alkaline side, as the beating continues.

In addition to the development of satisfactory water resistance from this type of size, very satisfactory dimensional stability is obtained in asbestos paper. This paper may ultimately be used in applications where the temperature may be very low and subject to condensation. It also may be used at extremely high temperatures and subject to shrinkage, due to excessive dehydration.

• Summarizing again, we can state that the sodium soap of a high titre, saturated fatty acid can be utilized in addition to its water repellent characteristics, to impart: (1) good dimensional stability, (2) relative freedom from chemical activity with highly reactive materials such as photographic developing solutions, (3) freedom from foam problems commonly experienced with rosin size, and (4) satisfactory sizing even at a pH of 10.0 at the time of sheet formation.

The above mentioned chemicals and their effects in the paper making operation may be familiar to many of you. However, it is felt that in the interest of continuity and for comparative purposes, it was desirable to mention them.

Polystyrene Resin Emulsion

Now let us turn to a synthetic resin emulsion which is probably unfamiliar to most of you. I would like to go into some detail regarding the use of a polystyrene emulsion of the anionic type. This emulsion can be successfully utilized as a beater addition to any desired fibrous furnish, if the purpose of such an addition is to produce unique effects using cellulose fiber as a basic constituent in the development of paper laminates.

The polystyrene emulsion which I have in mind is a bluish-white product, having approximately 42 percent solids. It has a pH of 9.5. The viscosity at room temperature is 20 cps. The particle is about 0.2 micron. The flow point of its films may be varied from 180° to 60°C. It may be diluted to any desired concentration. It has excellent stability to pumping action and agitation of all types but it is immediately precipitated into a fine floc by the addition of alum. When added to cellulose fibers in the absence of alum and when the stock is on the alkaline side, very little reaction takes place and the emulsion distributes itself very uniformly throughout the fiber mass. When alum is added a fine precipitate develops first which later becomes coarser. In some cases, the particles of resin are visible to the naked eye. If the emulsion is added to the fiber mass in the absence of alum, it is not necessary to dilute the emulsion prior to addition. However, if the stock has been acidified before the addition of the emulsion it is necessary to dilute it to approximately 1 percent solids to prevent too rapid precipitation. By either method the pH of the stock for satisfactory retention must be lowered to 4.0 to 4.5.

The amount of resin solids added varies depending upon the results desired, but usually at least 25 percent resin to 75 percent fiber is the minimum. The maximum which has been run commercially is 60 percent resin and 40 percent fiber. The retention of this relatively high chemical addition is remarkably good. Laboratory retention figures indicate 95 to 97 percent whereas commercial runs have been between 90 and 93 percent.

The machine characteristics during a run of this sort are normal for all practical purposes. Even though the sheet weight in some cases is more than doubled, the amount of heat required for drying is very nearly the same, due to the fact that the resin has no affinity for water. In one run on an experimental paper machine, it appeared that the sheet with 40 percent resin and 60 percent fiber actually dried easier. A possible explanation of this phenomenon could be greater porosity of the web containing the resin.

Characteristics of the paper as it comes from the dry end of the machine are not greatly different from those of paper of the same fiber furnish but without resin. It is not until the resin containing material is further treated that effects of the resin begin to show. When a sheet consisting of 40 percent resin and 60 percent fiber is laminated in a press at 500 pounds per square inch and 300°F. for 10 minutes, a beautiful laminate is obtained. If this sheet is pressed at lower pressures and temperatures with almost no elapsed time, such as may be obtained in a supercalender stack, the resin flow is not complete, but an interesting product is obtained. The physical characteristics which can be developed in a product such as described above when it has been pressed so as to develop the maximum flow of the resin are shown in Table I.

Table I

	Sample No. 1	Sample No. 2	Sample No. 3
Thickness	.054	.044	.060
Dielectric Voltage	1092	1250	984
Power Factor	.0206	.0195	.0210
Dielectric Constant	3.15	3.09	3.33
Water Absorption	4.87%	5.32%	4.49%
Rockwell Hardness (Cold)	78	73	71
Rockwell Hardness (Hot)	40	40	45

Softening and Rewetting Materials

In closing, I would like to ask you to turn with me from waterproofing materials and synthetic resins to the use of synthetic chemicals to produce better absorbency and softer qualities in tissue and towelling.

Some new chemicals which were developed during the war, falling generally into the class of fatty amides, have been treated in a special way to give them cation activity.

To impart greater absorbency or rewetting ability to an unbleached groundwood sheet, the following laboratory procedure, which has been subsequently verified in the mill, was utilized. The pulp was broken up in the laboratory beater for about 3 min-

Table II
Bleached Groundwood

No.	1% Alum or .1% Soda	.1% Surface Active Agent	pH	Rewetting (Secs.) 0	1 hr.	4 hrs.
1-G	.....	None	6.5	22	25	25
2-G	5 cc—A	None	5.5	33	42	54
3-G	5 cc—S	None	8.4	18	23	23
4-G	.....	10 cc—Nopco 1285	7.0	27	33	21
5-G	5 cc—A	10 cc—Nopco 1285	5.7	23	24	30
6-G	5 cc—S	10 cc—Nopco 1285	8.6	21	22	29
7-G	.....	10 cc—Nopco 73	7.0	27	37	44
8-G	5 cc—A	10 cc—Nopco 73	6.0	36	37	51
9-G	5 cc—S	10 cc—Nopco 73	8.6	26	31	27

ates at a consistency of 1.76 percent.

Two 4-gram sheets were prepared by measuring out 450 cc's at 1.76 percent consistency. The pH was adjusted prior to the addition of the rewetting agent. Following the addition of the agent the pulp was stirred for about 5 minutes, diluted to 800 cc's, and then stirred another 10 minutes during which time the pH was determined.

After the pH was recorded, two 4-gram hand sheets were prepared in the usual way by dividing the sample into 2 parts, 400 cc's for each sheet. The sheets were pressed at 60 pounds per square inch and dried.

TAPPI standard T-432M45 was used to test the rewetting time over a period of several hours' ageing at 100°C.

It was found that the effect of the rewetting agent on bleached groundwood was rather erratic. In fact, the chemicals (alum or caustic soda) seemed to have more influence than the rewetting agent.

Table III
Unbleached Groundwood

No.	1% Alum or .1% Soda	.1% Surface Active Agent	pH	Rewetting Time (Seconds) 0	1 hr.	4 hrs.
1—G	.....	None	7.7	37	45	60
2—G	8 cc — A	"	5.0	73	201	289
3—G	8 cc — S	"	8.7	34	66	50
4—G	.....	16 cc Nopco 73	7.1	33	40	40
5—G	8 cc — A	" " "	5.1	27	35	26
6—G	8 cc — S	" " "	8.1	26	28	28
7—G	.....	32 cc Nopco 73	6.9	25	23	26
8—G	8 cc — A	" " "	5.1	28	32	28
9—G	8 cc — S	" " "	8.4	21	22	23

In the case of unbleached groundwood a definite improvement was obtained with .2 percent of the wetting agent regardless of whether or not alum or NaOH was present. Further work in the laboratory and mill with chemical process pulps indicate there are many factors involved which have not been resolved up to the present time. A considerable amount of time and money is being expended in our laboratories to perfect the science of the use of cation surface active chemicals. Our vast experience in a great number of industrial applications should enable us to solve the problems which confront us. At some later date we hope to have a report summarizing a successful laboratory project on this subject.

It is hoped that the ideas presented here may inspire further creative thinking to find new uses for paper modified by chemical additives.

Elimination of Two-Sidedness

By
J. FERGUS SMITH
B.Sc., Ph.D, F.R.I.C., Titaghur Paper Mills, Kankinara, India

The phenomenon of two-sidedness in paper, by which we mean *any* difference between the two sides of a sheet discernible to the eye, has probably existed, in some form or another, ever since paper was first made on a Fourdrinier machine, almost 150 years ago.

These differences, for there are many forms of two-sidedness, have always been the cause of much complaint by the printers and much controversy in papermaking circles. Indeed, for a long time, papermakers regarded it as almost inevitable, and had no hesitation in telling the printers as much!

The most obvious difference, of course, is the wire mark, caused by the imprint of the knuckles of the wire mesh on the wet underside of the sheet. This mark, however, is no longer obvious on a sheet of paper which has been made on a modern machine due to the various mechanical improvements which have taken place in the manufacture of machine wires combined with the judicious use of wet presses and supercalenders, so that this aspect of two-sidedness is no longer considered a problem.

Similarly, one might also regard as extinct the problem which arose from the use of certain dyes, which had the unfortunate habit of changing their shade when they came into direct contact with the hot drying cylinder, with the inevitable two-sided result!

There is no excuse nowadays for this sort of thing when we regard the vast array of colors, all of them stable at these high temperatures, offered by the manufacturers.

Other forms of colored two-sidedness, however, have not been explained away quite so easily, and this is not so surprising when we consider that, in one case, the top-side may be a darker shade than the under or wire-side, and in another, the very opposite may obtain.

In addition to any difference in depth of shade there is also a difference in (a) texture, (b) formation, (c) smoothness, and (d) reflectance.

It is hardly surprising, therefore, that there has been so much confusion of thought, which in turn, has lead to so many different "explanations" of this papermaking problem. Some of these have been quite correct so far as they went, but others again have been hopelessly wide of the mark and not one, so far as I am aware, has satisfactorily explained every form of two-sidedness, let alone put forward a positive means of eliminating it.

It is generally recognized, of course, that the root cause lies in the uneven distribution of the loading and fine fibres throughout the thickness of the sheet of paper, whereby the underside appears to have a proponderance of longer fibres, and the top-side an excess of loading, etc. Many opinions have been expressed, both inside and outside the paper mill, as to how this structural difference could have come about, in the course of which, speed, suction boxes, slices, aeration of stock, etc., have all been held responsible.

It was quite obvious, however, that what was wanted was more scientific facts and unbiased views relating to the problem.

When I investigated this problem before the late war, I was resolved to investigate all these opinions, if possible, to see if they could be supported by any experimental facts, and if not, to deduce from the facts a theory which would fit them.

Analyses of numerous papers made on both slow and fast machines, including all of the usual types of fine papers and newsprint, showed quite definitely that the two-sided effect on newsprint was distinctly greater than that on fine papers, judged not only by eye and appearance under the microscope, but by the percentage of ash on the top layer relative to that on the bottom layer.

This appeared to indicate that speed was certainly a contributory factor, but the evidence also suggested that it was hardly possible to obtain a sheet of paper free from two-sidedness, even at very low speeds, especially colored papers made from pigmentary dyes such as ultramarine.

With regard to the effect of suction boxes, an experimental run without them showed just as much two-sidedness as with them, although there was an overall reduction in color.

Experiments in the laboratory with a modified form of the British Standard Sheet Machine, on which any degree of desired suction could be obtained, showed quite definitely that it was not possible to strip from the bottom of a sheet relatively more fine fibres and loading than from the top. On the contrary, most of these sheets made under varying conditions of consistency, air and water suction, etc., showed a definite preponderance of "fines" on the wire side!

This appeared to indicate that strong suction could move "fines" relatively to long fibres *within the sheet*, but could not remove them from the sheet

in such a way that the bottom layers were left with less "fines" than those above.

Similar experiments conducted under conditions of vibration, in an effort to simulate a suggested bumping of the immature sheet as it passed over the table rolls, failed to produce results in any way different from those already given above.

In these laboratory experiments it was observed that, although the losses through the wire varied according to the conditions of consistency, suction, etc., they never, at any time, approached those experienced in the mill. This seemed a very important point, which up to that time had not been fully appreciated, possibly due to the fact that laboratory sheet-making conditions normally call for a finer mesh wire and no suction.

Attention was now directed to the observation of mill machine conditions and to the accumulation of machine data in order to find an explanation for the great disparity in wire losses mentioned above. Consistency determinations of numerous backwater samples from the various table rolls, suction boxes, etc., brought to light some very interesting facts.

First, it was quite clear that, other things being equal, the faster the machine, the greater the wire losses. This agrees with the former observed fact that the faster the machine the greater the two-sidedness.

Secondly, it was established that the formation of the sheet on the wire was not accompanied by a normal filtration, in that the percentage of backwater solids did not decrease at the same rate (from breast roll to suction box) as had been found in the laboratory. It was to be expected that the initial rush of backwater would contain a high percentage of solids and that this would gradually decrease towards the couch and, at the same time, the percentage of loading in the backwater solids would quickly increase as the sheet exerted a filtering action on the fibres. However, the results showed quite plainly that, towards the middle of the table, the actual spot depending on the type of machine the decrease in consistency of the backwater more or less came to a halt, and from there to the boxes scarcely changed. Similarly, the percentage ash in the backwater solids flattened out until it reached the boxes, when it immediately shot up.

It seemed fairly clear then that the sheet was not being allowed to consolidate itself, but that some disturbing agency was at work, which hindered the formation of the fibres and actually caused thereby a greater loss through the wire.

It has long been observed that although table rolls are very efficient water-removers, they also put back into the sheet a fair amount. Attempts have been made to reduce this effect by covering the rolls with rubber, etc., so that the water is thrown off the rolls to a great extent before it is taken back to the wire.

The efficiency of this device, however, can never be very high, as it will depend to a great extent on the diameter of the roll and the speed of the machine. A visual indication of the amount of water which is nipped between the roll and the wire is given by the size of the hump to be seen stretching across the table immediately above each tube roll.

An extensive study of this phenomenon served to show that, every time the immature sheet rode over a table roll, the water in the nip was squeezed through the wire (lifting momentarily the whole sheet, flooding and loosening the smallest fibres and loading in the lower layers), and almost immediately withdrawn by the suction generated by the parting of the roll and wire surfaces.

This washing effect was obviously considerable when repeated at every table roll, and, after mature consideration, it was realized that this phenomenon *could* explain (a) the much higher losses sustained in the mill than in the laboratory; (b) the fact that the percentage backwater solids did not decrease uniformly as in a normal filtration; (c) the great scarcity of "fines" on the wire-side of the sheet, and in particular, why the majority of the remaining long fibres were orientated in the machine direction; and (d) the reason why fast machines, with their highly rotating tube rolls, show such a marked two-sided effect, and have such high wire losses.

Even on very slow machines the washing is there; the increase in the number of rolls and the decrease in their diameter partly compensating for the reduced speed, and the extent of the washing effect can be judged by the size of the hump or ridge which can be seen very clearly stretching across the table immediately above each roll.

It now remained to make a two-sided sheet in the laboratory in order to confirm that the above theory would fit the facts. It seemed quite clear that, before the sheet could be made two-sided, it had to be properly formed on the wire, so that any washing effect from underneath the wire would not just dilute the stock above in general, but would do so without actually breaking the main skeleton structure of the sheet, and would not penetrate beyond the lower strata. In other words, it appeared unlikely that the two-sided effect would be formed unless the washing action was a gentle one, little and often being preferable.

After the sheet had been formed on the sheet machine wire without the use of suction, it was subjected to a gentle "hosing" from underneath the wire, backwards and forwards, over the same part of the wire and, after repeating a dozen times or more, the sheet was couched and dried in the usual way. It revealed a streak or band on the wire side having a darker shade and a coarser texture than the rest of the wire-side, the effect being very similar to the differences obtained on machine made paper.

Final proof was obtained by making sheets on the sheet machine as before, couching them on to a miniature machine wire, supported by tube rolls and a driving roll, and causing the sheets to be carried round and round at varying speeds on the surface of the wire mesh, during which their undersides were subjected to the washing effect provided by the rolls, one of which rotated in a vat of water.

The sheets showed a two-sided effect, the extent of which could be varied either by the machine speed or the number of times which the sheet passed over a table roll, which was exactly the same as that obtained in the mill using the same furnish.

At the beginning of this article various types of two-sidedness were listed, which it had been found difficult to reconcile with the numerous explanations put forward from time to time, and it is now proposed to examine them in the light of the above explanation of their courses.

The topside of a machine made sheet is always smoother and has a closer formation than the wire or under-side. This fact has already been sufficiently explained above and, similarly, with the observed differences in texture, orientation of fibres etc.

The reflectance of the under-side is often greater than that of the top. The explanation of this apparent paradox lies in the property which some fibres have of being able to reflect light to a greater extent than others. For example, the sulphite fibres on the wire side of a sheet of newsprint, which have been laid bare by the washing effect of the table rolls, reflect the light much more than the top-side, which of course contains a preponderance of the duller ground-wood and loading. Incidentally, this is one case where relative smoothness could not be properly measured by optical means!

If, in the above example, the newsprint had been dyed in the usual way, the topside would have been lighter than the wire-side, because sulphite fibres are stained more than ground-wood or loading. Similarly, if, in a mixed furnish, the longer fibres are stained to a greater extent than the shorter, then the under-side will be darker in shade than the top.

If, however, the reverse is the case, what then is the explanation? The answer here lies in the type of dye used; and it should be appreciated by now, that a pigmentary dye, under this theory, will act in the same way as a filler; so that most of it will be washed out from the bottom layers of the sheet, leaving the latter with most of the color on the top-side. This particular case is borne out very strongly by the use of ultramarine.

Having shown beyond reasonable

doubt, the actual fundamental cause of two-sidedness in paper, attention was now directed to finding a means of eliminating it.

As every technician has experienced, it is one thing to discover the reason for a certain manufacturing fault, but quite another to eliminate the cause *cheaply!*

Many attempts have been made to cure two-sidedness, and doubtless the most successful, up to date, is the twin-wire machine in which the immature sheets from two wires are pressed together, wire-side to wire-side, before pressing and drying; but even their most ardent supporters would hesitate to say that this method of overcoming two-sidedness was inexpensive. In other patented methods, attempts have been made to put back into the wire side, by spray or coating roll etc., a suspension of loading and fine fibres, with various degrees of succes. All these methods, however, are merely correctives and not cures, no attempt having been made to *prevent* the *formation* of twosidedness.

It was obvious, of course, that the water clinging to the underside of the wire and to the roll had to be prevented from being forced through the meshes of the wire. Although it was found practicable to "doctor" the major portion of the water from the roll, removal from the wire was an entirely different proposition; the practical difficulties being so great, that it was considered inadvisable to proceed further with this "solution" to the problem.

The alternative of allowing the water to pass through the nip was now considered and, after many experiments, it was found that a tube roll, on the surface of which a thread had been cut, offered a probable solution to the problem!

The depth of the groove was found to be quite critical for slow, medium and fast machines, and also on the position which the roll occupied with respect to the slice. This is not surprising when we closely examine the modus operandi of the device. If the groove is too deep it will not be completely filled with water, and the suction, caused by the parting of the wire and roll surfaces, will be broken prematurely, with the result that the efficiency of the roll as a water-removing device will be greatly reduced. On the other hand, if it is too shallow, water will be pushed through the wire and two-sidedness will result:

On fast machines, it will be realized that the amount of water, coming from the sheet, is initially so great that any type of table roll, except perhaps a "dandy" type, is a hindrance rather than an asset as far as water extraction is concerned; this being so, it was not found necessary to worry about increasing greatly the depth of the grooves on the first two or three table rolls to try and accommodate the vast volume of water present.

Once the sheet has been formed however, it is essential that the grooves should be just the correct size, and this will necessarily decrease as the sheet becomes drier.

When the correct depth of groove was found for each roll, the maximum benefit was derived; so that, in addition to the elimination of two-sidedness, losses through the wire were greatly reduced, and in consequence the freeness of the headbox stock (in a closed system) was increased.

"Making-up" of the grooves was prevented by the use of a wire brush, travelling in contact with them, and driven by the thread, right across the width of the machine. By arranging adjacent rolls with right and left hand threads the work of the wire guides was not increased.

Patent Abstracts

● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information are included.***

2,473,954—Treatment of Alkali Cellulose. Guillaume M. A. Kayser, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N. C. Filed November 18, 1946—Issued June 21, 1949.

A process for delaying the aging of alkali cellulose which comprises aging alkali cellulose in the presence of about 0.08% of sodium trithiocarbonate, based on the weight of the alkali cellulose.

2,474,034—Bleaching Poplar Groundwood. Kenneth A. Craig, Appleton, Wis., assignor to Paper Patents Company. Filed December 4, 1946—Issued June 21, 1949.

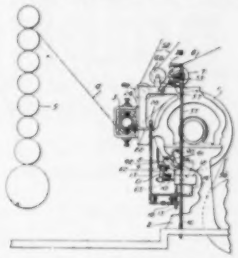
In the paper art, the process of treating poplar groundwood contaminated with fungi rot which comprises subjecting the contaminated groundwood to the action of an alkaline hypochlorite solution having a pH value of about 9-11 and a temperature of about 25°-25° C., sufficient hypochlorite being present to provide about 7-15 percent available chlorine based on the groundwood, and then acidifying said solution after the consumption of the available chlorine.

2,474,046 — Process of Producing Lactic Acid. Karl W. Fries, Rhinelander, Wis., assignor to Rhinelander Paper Company, Rhinelander, Wis. Filed October 19, 1945—Issued June 21, 1949.

The method of producing lactic acid from waste sulphite liquor containing lignins, sugars and free and loosely combined sulfur dioxide, which comprises adding sufficient lime to said waste liquor to effect a pH therein of between 8.0 and 8.8, thereby causing the precipitation of said free and loosely combined sulfur dioxide, as calcium sulfite, allowing the lime-treated mass to stand for a time not exceeding 1½ hours if the temperature of said mass is above 35° C., separating the resulting precipitate from the liquor, adjusting the liquor to a temperature between 30° and 40° C. and to a pH between 6.3 and 6.7, adding to said liquor an inoculum of *Lactobacillus pentosus* 124-2 and a nutrient therefor, maintaining said inoculated liquor within the temperature and pH limits last mentioned until a substantial conversion of said sugars to lactic acid has occurred, and recovering the lactic acid so produced.

2,474,052—Doctor Operating Mechanism. Anton Walter Johnson, Masson, Quebec, Canada. Filed May 6, 1946—Issued June 21, 1949.

A paper making machine including a frame, a dryer roll mounted in the frame, a calender forwardly of the dryer roll and adapted to receive a paper web therefrom, a spring roll between the dryer roll and the calender and adapted to engage and to impose a normal degree of tension on a paper web passing thereunder from the dryer roll to the calender, said spring roll being mounted in vertically movable bearings on the frame, springs carried by the frame and resiliently supporting said bearings to limit the vertical movement thereof, said spring roll and bearings moving downwardly a slight distance on breakage of such paper web, a doctor member cooperating with but normally disengaged from said dryer roll, fluid actuating means for shifting the doctor member into engagement with said dryer roll, a lever pivoted intermediate its ends on the frame with one end thereof in the path of movement of one of the bearings of the spring roll, whereby



slight downward movement of said bearing effects pivotal motion of the lever, and a control member for the actuating means of the doctor member engageable by the other end of said lever upon pivotal motion of said lever in response to downward movement of said spring roll bearing induced by breakage of such paper web, the pivotal point of the lever being closer to the bearing than to the control member.

2,474,314 — Method and Apparatus for Size Reduction and Fiberizing of Crude Fibrous Materials. Frank J. Koehne, Martinsville, N. J., assignor to Johns-Manville Corporation, New York, N. Y. Filed November 28, 1944—Issued June 28, 1949.

The method of dry crushing and opening coarse fibrous material which comprises, forming and maintaining a thin suspension of the coarse material in a rapidly rotating gaseous fluid vortex, reducing and fiberizing the charge material by centrifugal impact against striking surfaces and by mutual impingement of particles, deflecting the rotational gas flow inwardly at said strik-

ing surfaces and developing inertia momentum of incompletely fiberized material tending to retain

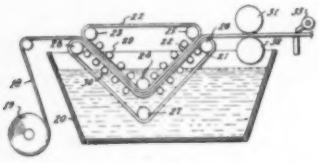
it within the vortex, and selectively removing suitably reduced and opened fibers tangentially outward from the attrition zone before excessive attrition thereof by reversing the direction of flow of said reduced and opened fibers at the periphery of the vortex.

2,474,306—Cellulosic Products. Leonard Doub, Detroit, Mich., assignor to Parke, Davis & Company, Detroit, Mich. Filed February 23, 1945—Issued June 28, 1949.

A lyophilic aggregate of independent fibers of a cellulose having a carboxyl content between about 2% and 23% selected from the class consisting of oxidized cellulose and partially neutralized oxidized cellulose, the oxidized cellulose of said fibers being at least partially in the form of its reaction product with a high molecular weight quaternary ammonium salt wetting agent.

2,474,391 — Process for Producing Packing Structures. Samuel Bergstein, Cincinnati, Ohio, assignor to Robert Morris Bergstein and Frank David Bergstein, trustees. Filed October 26, 1945—Issued June 28, 1949.

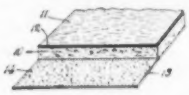
A process of molding paperboard which comprises passing paperboard briefly through a bath



of water and immediately between press rollers acting to drive some of the water into the board and to remove surface excess, shielding portions of the board from the water as it passes through the bath so as to produce relatively wet and dry areas in the board, then molding the board between heated die members maintained in contact therewith until the board has lost sufficient moisture to retain its molded shape, and including the step of molding large, deep configurations in the relatively wet areas of the board and corrugations in the relatively dry areas of the board, said corrugations in the relatively dry areas of the board being smaller, shallower, and more closely spaced than the configurations in the relatively wet areas of the board whereby to contract the board in one direction approximately the same amount, the board being passed through the bath in a continuous length and cut apart into sheets before molding.

2,474,398 — Surface Fluxing Coated Liner. Clark C. Heritage Cloquet, Minn., assignor to Wood Conversion Company, St. Paul, Minn. Filed April 21, 1943—Issued June 28, 1949.

The method of making a creped sheet having resistance to the transmission of water-vapor, which comprises applying to sheet material to be creped a fusible substance raving the property of resisting the transmission of water-vapor and having the property of being adhesive when hot and nearly solid, causing said coated sheet while in an adhesive condition to adhere to a creping roll and removing the sheet therefrom by a doctor



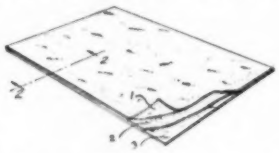
blade to effect creping of the sheet, exposing the said coat material on the creped sheet to a fluxing heat and thereby fluxing at least the exposed surface of the coat, cooling the resulting coat to the point of adhesiveness and near-solidification while avoiding make-and-break adhesive contact with the coat during the cooling and while the coat is in the adhesive condition, and uniting the sheet to another element by the adhesiveness of the coat in the nearly solid condition.

2,474,476—Carton. Reynolds Guyer, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn. Filed December 9, 1944—Issued June 28, 1949.

A carton comprising substantially tubularly arranged side walls, end closing flaps issuing therefrom, and narrow substantially triangular areas at the upper extremity of two opposed side walls tapering to the planes of said two walls at the side edges thereof and underlying the closure flaps and forming marginal supports therefor in closed position thereof.

2,474,619—Heat-Sealable Sheet Material. Robert A. Farrell and Charley L. Wagner, Menasha, Wis., assignors to Marathon Paper Mills Company, Rothschild, Wis. Filed January 22, 1944—Issued June 28, 1949.

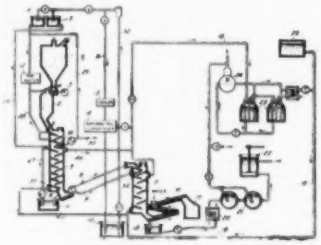
A heat-sealable packaging material comprising in adhered relation a relatively impermeable



base sheet material and a relatively porous tissue sheet material adhered to said base sheet by an intermediate flexing thermoplastic adhesive film, said adhesive film being confined to the inner surface of the porous sheet and the outer exposed surface of said porous sheet being substantially unchanged from its original characteristics, said film being present in amount so that upon application of heat and pressure to selected areas of the sheet material said adhesive will migrate differentially through said porous sheet at said areas rather than through said base sheet material to generate an adhesive sealing film on the outer surface of said porous sheet.

2,474,669—Cellulose Saccharification. André Héreng, Paris, France. Filed September 17, 1945—Issued June 28, 1949.

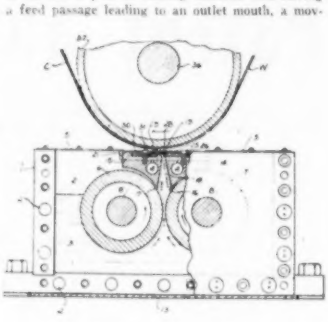
A continuous method of extracting the pentoses and hexoses from comminuted wood comprising the following steps: impregnating the wood by treating it with heated liquid hydrochloric acid of 27-33% concentration for 30 to 45 minutes, thereafter treating the wood with fresh liquid acid, extracting pentose containing liquid and treating the wood therewith at an earlier stage, subjecting the impregnated material to a countercurrent of gaseous hydrochloric acid at atmospheric pressure, thereby raising the strength of the acid absorbed in the wood to 41%, drying the material with a current of anhydrous gaseous hydrochloric acid at less than 30° C., thereby reducing the acid absorbed in the wood



to not over 2%, washing the lignin hexose mixture remaining after the last step, to extract hexoses, drying the remaining lignin, absorbing the pentose liquid previously collected with the lignin, extracting the pentoses by drying the lignin pentose mixture with a current of anhydrous gaseous hydrochloric acid at less than 30° C. and washing the lignin pentose to obtain the pentose.

2,474,691—Web Coating Apparatus. William A. Roehm, Rockville Centre, N. Y., assignor, by mesne assignments, to Virtu, Inc., Brooklyn, N. Y. Filed March 20, 1946—Issued June 28, 1949.

An apparatus comprising: a fountain adapted to contain a pool of coating material and having a feed passage leading to an outlet mouth, a mov-



able member having a surface positioned in close proximity to the outlet mouth and adapted to travel past the same, and at least one feed roll contacting said pool and a portion of the circumference of which forms part of the wall of the feed passage, said roll being rotatable in a direction to feed the coating material from the pool through said passage to and through the outlet mouth and against said surface under the thus mechanically generated hydraulic pressure, said outlet mouth being provided adjacent its forward edge with a dam spaced from said surface a distance substantially equal to the thickness of the coating desired on the surface.

2,475,285 — Method of Preparing Chlorine Dioxide. Willis S. Hutchinson, St. Paul, Minn., assignor to Mathieson Chemical Corporation. Filed July 12, 1944—Issued July 5, 1949.

A process for the production of chlorine dioxide in a state of dilution with an inert diluent gas which comprises reacting gaseous nitrogen peroxide, diluted with such diluent gas to a concentration not greater than about 10 mole percent, with a chlorite of a metal of the class consisting of the alkali and alkaline earth metals.

FINANCIAL RECORD

PREFERRED STOCKS	Per Share Earnings Calendar Year 1948	Per Share Earnings 12 Mo. to Approx. 9/30/49	Indic. Annual Divid. Rate	Nov. 22 Approx. Market Price
Armstrong Cork Co. $3.75 Cum.	$4.33*	$3.47*a	$3.75	$100
Armstrong Cork Co. $4.00 Cum. Conv.	6.33*	8.47*a	4.00	113⅜
Celotex Corp. 5% Cum.	26.42e	10.33p	1.00	16¼
Champion Paper & Fibre $4.50 Cum.	99.97f	19.91j	4.50	97¼
Container Corp. of Amer. 4% Cum.	105.41	90.43	4.00	102¼
Crown Zellerbach $4.20 Cum.	63.92i	61.00p	4.20	101¼
Crown Zellerbach $4.00 Cum. Conv. 2nd	60.56i*	57.90p*	4.00	98⅞
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	10.10	10.44	2.50	51
Flintkote Co. $4 Cum.	83.25	61.44	4.00	104
Robert Gair Co., Inc. 6% Cum.	17.08	12.88	1.20	18¼
International Paper Co. $4 Cum.	263.00	245.41	4.00	102¾
Johns-Manville $3.50 Cum.	209.89	204.89	3.50	119¼
Kimberly Clark Corp. 4½% Cum.	80.74	70.92	4.50	102¾
Kimberly Clark Corp. 4% Cum. Conv. 2nd	41.59*	42.20*	4.00	103½
MacAndrews & Forbes 6% Cum.	62.23	64.10	6.00	138¾
Mead Corp. 4¼% Cum.	73.46	49.00k	4.25	89
Mead Corp. 4% Cum. Conv. 2nd	29.91*	19.93k*	2.00	32⅜
Paraffine Cos. Inc. 4% Cum. Conv.	156.11	74.77	4.00	102¼
Rayonier Inc. $2 Cum.	16.43	10.76	2.00	31½
St. Regis Paper Co. 4.40% 1st A	79.90	34.21	4.40	86
Scott Paper Co. $3.40 Cum.	59.06	52.36	3.40	97⅞
U. S. Gypsum Co. 7% Cum.	314.45	281.64	7.00	185½
United Wallpaper Inc. 4% Cum. Conv.	(d)0.79	15.43	2.00	24½
West Virginia Pulp & Paper 4½% Cum.	79.45c	69.93p	4.50	107¾
COMMON STOCKS				
APW Products Co.	$0.73	(d)$1.01	(m)	2⅞
American Writing Paper Corp.	(d)0.15	0.05	$0.25	6¼
Armstrong Cork Co.	7.54	6.13a	3.00	49½
Celotex Corp.	7.21c	2.75p	1.00	18⅞
Certain-Teed Prods. Corp.	4.02	3.09	1.00	14⅛
Champion Paper & Fibre	8.70f	1.70j	2.00	28¼
Congoleum Nairn Co.	5.78	4.92a	2.00	28⅛
Container Corp. of America	10.12	8.50	4.50	39
Crown Zellerbach	7.16i	6.68p	2.00	27⅝
Dixie Cup Co.	6.70	7.00	1.50	38¼
Eastern Corp.	4.76	d0.07	(h)	14⅞
Flintkote Co.	5.86	4.14	2.50	29⅝
Robert Gair Co., Inc.	2.67	1.96	0.70	7⅛
Great Northern Paper Co.	4.63	5.21	2.80	39⅛
International Paper Co.	16.73	15.59	5.00	62⅞
Johns-Manville Corp.	5.22	5.07	2.50	44⅞
Kimberly Clark Corp.	5.02	4.32	1.65	24⅛
MacAndrews & Forbes c.o.	3.68	3.79	2.50	36⅝
Marathon Corp.	4.11c	3.42p	1.40	22⅜
Mead Corp.	6.36	3.98k	1.00	13¼
National Container Corp.	2.28	1.38a	0.40	6¾
Paraffine Cos. Inc.	2.45	1.15	1.20	18¼
Rayonier, Inc.	9.09	5.52	2.00	24
Ruberoid Co.	11.80	9.37	3.25	61½
St. Regis Paper Co.	2.71	1.02	0.60	7⅛
Scott Paper Co.	4.15	5.38	3.00	64½
Sutherland Paper Co.	6.02	5.12	2.50	36⅝
Union Bag & Paper Corp.	9.17	5.36	3.00	26⅜
United Board & Carton	2.04b	(d)1.72g	(e)	8
U. S. Gypsum Co.	15.04	13.43	9.00	109⅛
United Wallpaper	(d)0.10	0.42	(n)	3⅛
West Virginia Pulp & Paper	11.33e	9.70p	3.00	46½

(a) 12 months to approximately 6/30/49
(b) Year ended 11/23/48
(c) Year ended 10/31/48
(d) Deficit
(e) Omitted dividend 2/4/49
(f) 11 months to 3/31/49
(g) 12 months to approximately 8/20/49
(h) Directors took no action on August, 1949 dividend—last payment 5/2/49
(i) 12 months to approximately 1/30/49
(j) 3 months to 6/30/49
(k) 12 months to approximately 10/2/49
(m) Directors took no action on July, 1949, dividend—last payment 1/10/49
(n) Last payment 25c, 9/16/47
(p) 12 months to approximately 7/31/49
(*) Earnings per combined preferred shares.

Dividends Declared

Great Northern Paper Co. has declared an extra dividend of 60 cents and the regular quarterly dividend of 60 cents on its common stock, both payable December 1 to holders of record November 18.

Gaylord Container Corp. has declared a dividend of 37½c a share on its common stock payable December 10, to holders of record November 30.

Fort Wayne Corrugated Paper Co., has declared a year-end dividend of 75 cents a common share payable December 15.

Abitibi Power & Paper Co., Ltd., has declared a dividend of 37½c per share on its preferred stock, payable January 1, to holders of record December 1. The directors have authorized the purchase of shares of its preferred stock in the open market when conditions warrant and to the extent that cash is available.

Kalamazoo Vegetable Parchment Co., has declared a regular dividend of 15 cents per share and an extra dividend of 15 cents per share on its common stock, payable December 10 to holders of record, November 30.

Sutherland Paper Co. has declared an extra dividend of 50 cents and a regular quarterly dividend of 50 cents on its common stock, both payable December 15 to stock of record November 21.

Rayonier Inc. has declared a regular quarterly dividend of 50 cents per share on its $2 cumulative preferred stock, payable January 1, to holders of record December 16.

Powell River Co., Ltd., has declared an extra dividend of 85 cents and the regular quarterly dividend of 50 cents, both payable December 15 to holders of record November 24.

Building

- **FOR THE PAPER INDUSTRY**
- We design, build, and equip paper and pulp mills ... steam generating plants ... and facilities for eliminating stream pollution.
- Under one contract and one responsibility, we deliver jobs complete, ready for operation.
- We also furnish engineering reports and surveys. Current cost data available at all offices.

The H.K. Ferguson Co.
INDUSTRIAL ENGINEERS AND BUILDERS

THE FERGUSON BUILDING • CLEVELAND, OHIO
OFFICES IN NEW YORK, HOUSTON, CHICAGO, CINCINNATI AND LOS ANGELES

PRICES . . . . . .

The prices below reflect general market quotations applying to these standard grades in which the normal volume of business is being done.

NEW YORK

Delivered Ports

Standard News, per ton—

Rolls, contract	**$100.00/**	**—**
Sheets	**115.00/**	**—**

F.o.b. Mills, Carload freight allowed, dock N. Y.

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls	$6.50/	—
No. 1 Wrapping Rolls	7.25/	—
Standard Bag	6.00/	—

Tissues— per ream 24x36 (480) 10 lbs. 2500 lbs. or more

Wh. No. 1 Frd.	$155.00/	—
Wh. No. 1 M. G.	150.00/	—
Wh. No. 1½	140.00/	—
Wh. No. 2	120.00/	—
Kraft Anti-Tar	1.37½/	—
Shrd. Wh. No. 1 per lb.	.11½/	—

Toilet— per case of 100 rolls—1 M sheets.

Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.95/	—
Bleached 4½x5	8.80/	—
Per Case of 50 rolls—2000 sheets		
Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.80/	—
Per Case of 100 rolls—1000 sheets		
Facial, 4½ x 5, 2 ply	$8.95/$9.45	

Paper Towels— per case of 3750.

Wh. Jr. M'tif'd 9¼x9½	$5.25
Br. Sr. M'tif'd 10x12	3.60
Br. Jr. M'tif'd 9½x9¼	3.10
Br. Jr. Sgl. fold 10x10¼	3.15
Bkhd. 7½ x 11, 24/25 rolls	$3.95/$6.25

Manila, per cwt.

No. 1 Jute Tag 40 lb., sheets*	$15.05/$17.50	
Reg. Jute M.F. Manila, sheets*	13.50/ 15.50	
Wrapping Manila	8.75/ 10.50	
Printing Manila	10.00/ 11.00	

* Less usual allowance for rolls.

Boards, per ton—

Filled News	$77.50/	—
Plain Chip	75.00/	—
Bkhd. Mla. L-d. Chip*	92.50/	—
White Pat. coated*	110.00/	
Kraft Liners 42 lb.	100.00/	
Kraft Corr. .009	105.00/	
Binders Boards	110.00/116.00	

* Base Prices per 10 tons. Less than 10 ton but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

WORLD WOOD PULP MARKETS

Fourth Quarter Contract Prices, Per Short Air-Dry Ton

	Delivered, with varying freight allowances		On dock Atlantic Ports Full freight allowance		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$65.00/ —	$65.00/ —			
Soda, Bleached	113.00/ —	113.00/ —		Competitive	
Sulphate, Bleached	118.00/126.00	126.00/ —	125.00/128.00		
Sulphate, Unbl'd North'n		82.50/105.00	82.50/ 85.00	with	
Sulphate, Unbl'd South'n	80.00/ 82.50				
Sulphite Bkhd. (S'ftw'd)	118.00/ —	118.00/ —	118.00/ —	Domestic	Competitive
Sulphite, Bkhd. (H'dw'd)	113.00/ —				
Sulphite, Unbleached	100.00/ —	100.00/ —	100.00/ —	Grades	
Sulphite, Unbl'd (Glassine)	105.00/ —	105.00/ —	104.00/105.00		

WASTE PAPER MARKET

Prices to Mills*, (Per Ton) F.o.b. Cars Shipping Point

	New York	Philadelphia	Boston	Chicago
	Nov. 17	Nov. 1	Nov. 19	Nov. 1
No. 1 Mixed Paper	$9.00/$10.00	$7.00/ $9.00	$9.00/ —	$10.00/ —
Boxboard Cuts	9.00/ 10.00	6.00/ 7.00	— / 5.00	13.00/ —
Mill Wrappers	11.00/ 12.00	9.00/ 11.00	— / 9.00	12.00/ —
No. 1 News	12.00/ 13.00	9.00/ 10.00	11.00/ 12.50	16.00/ —
Over-issue News	14.00/ 15.00	12.00/ 14.00	8.00/ 10.50	19.00/ —
Corrugated Containers	15.00/ 17.00	15.00/ 17.00	14.50/ 15.50	20.00/ —
New Corrugated Cuts	18.00/ 20.00	20.00/ —	16.00/ —	23.00/ —
Double Kraft Ld. Corr. Cuts	34.00/ 35.00	30.00/ 35.00	25.00/ —	35.00/ —
Used Kraft Bags	28.00/ 30.00	20.00/ 22.00	25.00/ 30.00	20.00/ —
No. 1 Brown Kraft Paper	25.00/ 30.00	25.00/ 30.00	30.00/ 35.00	20.00/ —
Super Resorted Br. Kraft	30.00/ 35.00	35.00/ —	40.00/ —	35.00/ —
New Br. Kraft Env. Cuts	65.00/ 70.00	60.00/ 65.00	60.00/ 65.00	55.00/ —
New Br. Kraft Cuts	40.00/ 45.00	50.00/ —	45.00/ —	50.00/ —
No. 1 Gdwd. Shvs.	20.00/ 25.00	15.00/ 20.00	25.00/ —	26.00/ —
White Newsblanks	55.00/ 60.00	40.00/ 45.00	50.00/ 55.00	35.00/ —
No. 1 Flyleaf Shvs.	30.00/ 35.00	25.00/ 30.00	35.00/ 45.00	35.00/ —
No. 1 Soft Wht. Shvs.	80.00/ 85.00	60.00/ 65.00	70.00/ 80.00	55.00/ —
Super Soft Wht. Shvs.	85.00/ 90.00	70.00/ 75.00	80.00/ 90.00	60.00/ —
Hd. Wht. Shvs.	90.00/ 95.00	80.00/ 85.00	80.00/ 90.00	80.00/ —
Hd. Wht. Env. Cuts.	105.00/115.00	90.00/ 95.00	90.00/105.00	90.00/ —
New Manila Env. Cuts.	65.00/ 70.00	60.00/ 65.00	60.00/ 70.00	55.00/ —
Col. Tab Cards	30.00/ 35.00	20.00/ 25.00	35.00/ —	40.00/ —
Manila Tab Cards	65.00/ 70.00	65.00/ 70.00	75.00/ 80.00	65.00/ —
No. 1 Mixed Ledger	30.00/ 35.00	27.50/ 32.50	37.50/ —	40.00/ —
White Ledger	45.00/ 55.00	40.00/ 45.00	50.00/ 60.00	50.00/ —
Mixed Books & Mags.	10.00/ 12.00	9.00/ 10.00	12.00/ —	12.00/ —
No. 1 Rep'd Hvy. Books & Mags.	20.00/ 25.00	20.00/ —	22.00/ 23.00	23.00/ —

* Includes brokers' fee.

The following prices are representative distributors' resale prices:

Rag Content Bonds and Ledgers—
White, 20 lb.

Bonds

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$51.40/$53.90
100% Rag	44.55/ 46.15
75% Rag	33.90/ 35.40
50% Rag	28.10/ 29.55
25% Rag	24.85/ 26.80

Ledgers

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$52.65/$54.55
100% Rag	45.65/ 46.40
75% Rag	35.15/ 36.10
50% Rag	29.40/ 30.05
25% Rag	26.15/ 26.80

Sulphite Bonds and Ledgers
White, 20 lb.

Bonds

	4 Ctns. per cwt.
Watermarked	$16.55/$17.50
Plain	15.60/ 15.95

Ledgers

	4 Ctns. per cwt.
Watermarked	$18.05/$18.80

White Book

Conversion Coated	Case per cwt.
No. 1	$19.75/$20.90
No. 2	19.25/ 19.65
No. 3	17.75/ 18.90
Machine Coated	
No. 1	16.40/ 16.65
No. 2	14.40/ 15.15
Uncoated	
No. 1 Antique (Watermarked)	16.40/ 17.90
Offset	15.15/ 16.65
A Grade E. F.	15.40/ —
A Grade S. C.	15.90/ 16.15
B Grade E. F.	14.90/ 15.15
B Grade S. C.	15.40/ 15.65

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)	
Coarse Polished—India	.35½/ .36½
Fine Polished India	.41½/ .45
Unpolished—Paper Makers	.32½/ .34½
Tube Rope	.33½/ .35½
Wrapping	.36 / .38½
Cotton	.58 / .60
Polished Cotton	.55 / —
(Hard Fiber)	
Mex. Sisal	.21 / .27
(American Hemp)	
Polished Hemp	.43 / .48
Unpolished	.35 / .37½

Rag Market

New Domestic Cotton Cuttings
(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
White Shirt	$10.00/ $10.50
Unbleached Muslin	10.00/ 10.50
Light Silesias	7.00/ 7.50
White Back Blue Overalls	5.50/ 6.00
Blue Overalls	4.50/ 5.00
Fancy Shirt	4.50/ 5.00
Percales	5.50/ 6.00
Light Prints	5.50/ 6.00
No. 1 Washables	2.75/ 3.00
Bleachable Khaki	4.75/ 5.00
Unbleachable Khaki	4.00/ 4.50
Cottonades	4.25/ 4.75
Lt. Flannelettes	6.75/ 7.25
Men's Corduroy	3.50/ 4.00
Women's Corduroy	3.00/ 3.50

Old Domestic Cotton Rags
(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.
No. 1 Whites, Repacked	$4.25/ $4.75
No. 1 Whites, Miscellaneous	3.50/ 4.00
No. 2 Whites, Repacked	2.75/ 3.00

No. 2 Whites, Miscellaneous	2.00/	2.25
Cotton Pants & Overalls	2.50/	2.75
Thirds and Blues, Repacked	2.00/	2.25
No. 1 Roofing Rags	1.50/	1.55
No. 2 Roofing Rags	1.40/	1.45
No. 3 Jute Baggings	1.25/	1.30
No. 4 Brussels & brd. Bek'd crpts.	.90/	1.00
Roofing Bagging	.80/	.95

New Foreign Cotton Cuttings

(Prices to Mills, F.o.b. Dock, N. Y.)

	Per 100 lbs.
New Dark Cuttings	
New Mixed Cuttings	
Light Silesias	prices
Light Flannelettes	are
New White Cuttings	
New Unbleached Cuttings	nominal
Fancy Shirt Cuttings	
Light Prints	
Bleachable Khaki, No. 1	
Unbl. Khaki, No. 1	

Old Foreign Rags

(Prices to Mills, F.o.b. Dock, N. Y.)

	Per 100 lbs
No. 1 White Cottons	
No. 2 White Cottons	
No. 3 White Cottons	prices
No. 4 White Cottons	
Extra Light Prints	are
Old Light Prints	
Med. Light Prints	nominal
Dutch Blue Cottons	
Checks and Blues	
Linsey Garments	2.10/2.40
Dark Cottons, European	1.85/2.10
Dark Cottons, Egyptian	
Old Shopperies	
New Shopperies	

Bagging

(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.	
Foreign Gunny	$5.00/	5.50
Domestic Gunny, No. 1	6.00/	6.50
Heavy Wool Tares	6.00/	6.50
No. 1 Scrap Bagging	4.00/	4.50
Foreign Manila Rope	5.00/	5.25
Domestic Manila Rope	5.00/	5.25
Jute Strings	5.50/	5.75
No. 1 Sisal Strings	3.50/	4.00
Mixed Strings	1.15/	1.30

PHILADELPHIA

New Domestic Cotton Cuttings

(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.	
White Shirt	$10.00/	$10.50
Fancy Shirts	4.50/	5.00
Light Silesias	6.50/	7.00
Unbleached Muslin	9.75/	10.25
Light Prints	5.25/	5.75
Washable No. 1	2.50/	3.00
Blue Overall	5.75/	6.25
Percales	5.50/	6.00
Bleachable Khaki	4.50/	5.00
Unbleachable Khaki	3.25/	3.75
Men's Corduroy	3.75/	4.25
Ladies' Corduroy	3.25/	3.75
Cottonades	4.00/	4.50

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.	
Mixed White	$2.75/	$3.50
Thirds and Blues Repacked	2.50/	2.75
Cotton Pants & Overalls	2.40/	2.75
No. 1 Roofing Stock	1.20/	1.50
No. 2 Roofing Stock	1.10/	1.40
Roofing Bagging	1.00/	1.10

Bagging

(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.	
Old Manila Rope	$5.00/	$5.25
Foreign Gunny No. 1	6.75/	7.00
Domestic Gunny, No. 1	6.75/	7.00
Sisal Strings No. 1	3.00/	3.50
No. 1 Scrap	4.00/	4.50
No. 1 Jute Rope	5.50/	6.00

BOSTON

Bagging

(Prices to Dealers, F.o.b. Boston)

	Per 100 lbs.	
Foreign Gunny	$5.00	/$6.00
Domestic Gunny	5.00	/ 6.00
Domestic No. 1 Old Rope	5.00	/ 5.25
Foreign No. 1 Old Rope	5.00	/ 5.25
Mixed Strings	1.35	/ —
Transmission Rope—Domestic	3.00	/ 3.50
Jute Carpet Threads	—	/ 2.00
Bleachery Burlap	—	/ 9.00
Scrap Burlap—		
Foreign	4.00	/ 4.50
Domestic	4.00	/ 4.50
South America	5.00	/ 5.50
Austr. Wool Pouches	6.50	/ 7.00
New Zealand Wool Pouches	—	/ 4.00
New Burlap Cuttings	6.00	/ 7.00
Heavy Baling Bagging	7.50	/ 8.00
Paper Mill Bagging	—	/ 3.50

Domestic Rags (new)

(Prices to Dealers, F.o.b. Boston)

	Per 100 lbs.	
New Light Prints	5.75	/ 6.00
Fancy Percales	6.25	/ 6.50
White No. 1 Shirt	10.00	/10.75
Light Flannelettes	—	/ 7.00
Canton Flannels, Bleached	—	/ 9.00
Underwear Cutters, Bleached	10.75	/11.25
Underwear Cutters, Unbleached	10.00	/10.25
Blue Overalls	6.00	/ 6.50
Soft Unbleached	9.75	/10.50
Blue Cheviots	6.00	/ 6.50
Fancy Shirt	4.00	/ 4.50
Washable	3.00	/ 3.25
Khaki Cuttings	5.00	/ 5.25
Men's Corduroy	4.50	/ 5.00
Khaki Canvas	—	/ 3.50
B. V. D. Cuttings	10.00	/10.25

Domestic Rags (old)

(Prices to Dealers, F.o.b. Boston)

	Per 100 lbs.	
No. 1 Whites, Repacked	$4.00	/$4.50
No. 1 Whites, Miscellaneous	2.50	/ 3.00
Twos and Blues, Repacked	2.50	/ 2.75
Cotton Pants & Overalls	2.50	/ 2.75
No. 1 Roofing Stock	1.75	/ 1.80
No. 2 Roofing Stock	1.50	/ 1.55
Roofing Bagging	1.30	/ 1.45

MATERIALS

Blanc Fixe

Prices firm. Supply adequate. Heavy demand. Currently quoted at $85.00 in bags, car lots, at works, 6 cents per pound, l.c.l., deld. By-product supply somewhat restricted. Quoted at $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder

Demand improved. Prices steady. Prices range from $4.50 to $5.00 per 100 pound drums, l.c.l., works.

Casein

Argentine flush season underway. Production good. Demand weak; prices easier. U. S. supply limited. Current prices on processed acid precipated grades 22½ to 23 cents, imported grades 19½ to 20 cents, ex dock, N. Y. car lots.

Caustic Soda

Demand heavier. Stocks adequate for prompt shipment. Contract prices for 1950 unchanged. Solid caustic is reported at $3.05 per cwt. flaked and ground is quoted at $3.45 per cwt., in 400 pound drums, $3.95 per cwt. in 100 pound drums —car lots, at works; liquid 50 percent in tank cars at $2.40 per cwt.; liquid 73 percent in tank cars at $2.50 per cwt., at works.

China Clay

Demand strong. Supply of domestic and imported ample. Domestic airfloated filler quoted at $10 per ton, water-washed $11.00, car lots, f.o.b. mines. Coating clay is $16 to $30. Imported clays repriced to $15.20 and $28.35 short tons, export warehouse.

Chlorine

Demand strong. Supply condition tighter. Prices firm at present levels for 1950 contracts. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt. in multi-tank cars, f.o.b., works.

Rosin

Prices strengthen on top grades as demand picks up. Expect early decision on loan. Gum rosin in drums per 100 pounds net in car lots, f.o.b. Savannah, B, $5.75; G, H, I, K, $6.59; wood rosin, per 100 lbs., car lots, f.o.b. Savannah; B, $4.25; FF, $5.50.

Rosin Size

Demand steady. Supply good. Seventy percent gum and pale wood grades, tank cars, $5.65 to $5.75 f.o.b. southern shipping point.

Salt Cake

Supply ample. Demand good. Domestic quoted at $22.00/$24.00, f.o.b. shipping point, freight allowed to destination.

Soda Ash

Demand improved; supply adequate. Current prices, car lots per 100 pounds; light ash in bulk, $1.00; in paper bags, $1.25.

Starch, Corn

Demand strong. Supply ample. Prices guaranteed against rises to Nov. 30. Pearl grade currently quoted at $4.72 per 100 pounds; powdered starch at $4.83 per 100 pounds; white corn dextrine at $5.99 per 100 pounds; car lots, f.o.b. Chicago.

Starch, Potato

Heavy paper and textile demand. Supply tightened by crop conditions. Prices nominal. Idaho high grade quoted at $7.25 cwt. l.c.l., ex N. Y. whse. New production quoted at $5.25 cwt., car lots, f.o.b. shipping point. Maine production makes slow start on heavy order backlog. Quoted at $5.10 cwt. f.o.b. shipping point.

Sulphate of Alumina

Demand steady. Prices firm. Supply good. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.75 per 100 pounds in bags, car lots, at works.

Sulphur

Supply ample. Demand sustained at good level. Prices firm. Annual contracts are quoted at $18 per long ton, f.o.b. mines; $19.50, f.o.b. vessels, Gulf ports. Export price f.o.b. Gulf ports is $22.00 per long ton.

Talc

Demand continues far ahead of supply. Prices steady. Domestic grades are currently quoted at $23 to $28 per ton in 50-lb. paper sacks, car lots, f.o.b. mills; Canadian at $35 and up per ton.

Tapioca Flour

Supply liberal. Fair demand. Dextrinizable grades range from $9.00/$9.90 cwt. for superior high grades to $8.25/$8.75 cwt. for highs, on dock Atlantic and Gulf ports. Medium grades range from $7.00/$7.50 cwt. on dock, N. Y., and are tight in supply, prices firm.

Titanium Dioxide

Demand strong. Prices firm. Output threatened by steel strike. Anastase 19½c pound carload lots, 20c l.c.l., rutile, 21½c pound carload lots, 22½c l.c.l.; 50-pound bags, f.o.b. plant, actual freight allowed.

IMPORTS — EXPORTS

IMPORTS AT NEW YORK

Week Ending Nov. 19

Newsprint

H. C. Craig Co., G.D.D., Donnacona, 344 rolls.
News Syndicate Co., Richard J. Barnes, Thorold, 1175 tons.
R. A. Olsen, G.T.D., Donnacona, 344 rolls.
News Syndicate Co., Colabee, Baie Comeau, 2859 rolls.
R. A. Olsen, Newscarrier, Donnacona, 373 rolls.
News Syndicate Co., Ethel Tombs, Gatineau, 296 rolls.
R. A. Olsen, Kermic, Donnacona, 363 rolls.
News Syndicate Co., Ted, Thorold, 1828 rolls.
Madden Reeve Angel & Co., Inc., Vretaholm, Helsingfors, 490 rolls.
News Syndicate Co., Mimi, Thorold, 1807 rolls.

Wrapping Paper

Jay Madden Corp., Hamina, Rauma, 1109 rolls.
Resolute Paper Products Corp., Hamina, Rauma, 2894 rolls (sulphite).
(———), Hamina, Rauma, 23 rolls.

Wallpaper

Orientex Ltd., Grete Maersk, Kobe, 8 cs.
Southern Wallpaper Co., American Chief, Manchester, 16 ctns.

Paperhangings

W.H.S. Lloyd & Co., American Chief, Manchester, 8 bls.

C. A. Haynes & Co., American Shipper, London, 2 cs., 21 bls.

Writing Paper

Globe Shipping Co., Ile de France, Havre, 1 cs.
Gimbel Bros., Ile de France, Havre, 3 cs.
American Express Co., Ile de France, Havre, 6 cs.
H. W. Robinson & Co., American Shipper, London, 1 cs.

Printing Paper

F. C. Strype, Veendam, Rotterdam, 10 cs. (uncoated).

Surface Coated Paper

Gevaert Co. of America, Herdis, Antwerp, 38 cs.

Gummed Paper

B. F. Drakenfeld & Co., American Chief, Liverpool, 47 cs.
B. F. Drakenfeld & Co., American Traveler, Liverpool, 47 cs.

Boxboards

National City Bank, Hamina, Rauma, 77 bls.
Jay Madden Corp., Vretaholm, Helsingfors, 120 rolls.

Miscellaneous Paper

F. L. Kraemer & Co., American Shipper, London, 1 cs.

Rags, Baggings, etc.

Castle & Overton, Inc., American Shipper, London, 40 bls. cotton rags.
National City Bank, Maria C., Genoa, 87 bls. old bagging.
Ayres W. C. Jones, Vibeke Maersk, Rouen, 67 bls. cotton waste.
A. Siegle Corp., Vibeke Maersk, Rouen, 43 bls. cotton waste.
A. W. Fenton Co., Vibeke Maersk, Havre, 214 bls. old bagging.
Midwest Waste Materials Co., Vibeke Maersk, Havre, 185 bls. old bagging, 5 bls. old stockings.
(———), Vibeke Maersk, Havre, 316 bls. cotton waste.
Amicale Wood Service Co., Black Eagle, Antwerp, 5 bls. flaxwaste.
A. de Vries Trading Corp., Herdis, Antwerp, 167 bls. bagging.
L. Gotthieb, Herdis, Antwerp, 65 bls. rags.
Herbert Mayer Corp., Mormacyork, Copenhagen, 55 bls. bagging.
Darmstadt Scott & Courtney, Venezuela, Copenhagen, 118 bls. rags.
Chase National Bank, Venezuela, Copenhagen, 119 bls. bagging.
S. H. Waldstein, American Chief, Liverpool, 45 bls. cotton waste.
Leigh Textile Co., American Chief, Liverpool, 972 bls. cotton waste.
(———), American Chief, Manchester, 39 bls. bagging.
(———), American Chief, Manchester, 45 bls. newcuttings.
M. O. Schimmel, American Chief, Manchester, 77 bls. cotton waste.
New England Waste Co., Examiner, Genoa, 179 bls. cotton waste.
Hill & Cutter, Examiner, Genoa, 111 bls. cotton waste.
1st National Bank of Boston, Examiner, Venice, 228 bls. old jute bagging.
Loumar Textile By Products Co., Kristina Thorden, Malmo, 115 bls. old bagging.
1st National Bank of Boston, Hellenic, Piraeus, 75 bls. jute rags.
(———), Hellenic, Mersin, 137 bls. cotton waste.
New England Waste Co., Froste, Santos, 56 bls. cotton linters.
Williamson & Northrup, Froste, Santos, 572 bls. cotton linters.
Chase National Bank, Indochinois, Dunkirk, 200 bls. cotton waste.
J. J. Rozendaal, Indochinois, Dunkirk, 823 bls. cotton waste.
American Cotton Products Co., Pres. Grant, Hong Kong, 100 bls. cotton waste.
(———), Mormacstar, Santos, 12 bls. rags.
(———), American Traveler, Glasgow, 212 bls. bagging, 440 bls. jute waste.
E. Butterworth & Co., Inc., American Traveler, Manchester, 154 bls. old bagging.
E. J. Keller Co., Inc., American Traveler, Manchester, 78 bls. bagging.
Darmstadt Scott & Courtney, American Traveler, Manchester, 63 bls. cotton waste, 53 bls. bagging.
Loumar Textile By Products Co., American Traveler, Manchester, 81 bls. old bagging.
American Express Co., American Traveler, Manchester, 40 bls. new wool rags.
Atlas Fibre Co., American Traveler, Manchester, 127 bls. old bagging.
New England Waste Co., Flying Enterprise, Antwerp, 62 bls. cotton waste.
A. W. Fenton Co., Flying Enterprise, Antwerp, 112 bls. jute bagging.
Harris Goldman Co., Flying Enterprise, Antwerp, 61 bls. rags.
Chase National Bank, Flying Enterprise, Rotterdam, 102 bls. old jute bagging.

Old Rope

National City Bank, Venezuela, Copenhagen, 105 bls., 10 coils.
(———), Markhor, Calcutta, 125 bls. old hemp rope cuttings.
Smith & Bird, Pacific Unity, Calcutta, 125 bls. old hemp rope cuttings.

Casein

American Cyanamid Co., Argentina, Buenos Aires, 3000 bags.
The Borden Co., Chemical Division, Argentina, Buenos Aires, 2000 bags (ground lactic).
American British Chemical Supplies, Argentina, Buenos Aires, 500 bags (extra lactic).
Crawford Co., Argentina, Buenos Aires, 4000 bags (lactic).
Hercules Powder Co., Argentina, Buenos Aires, 1000 bags (lactic).
P. A. Dunkel, Argentina, Buenos Aires, 500 bags (extra lactic).
Crawford Keen Co., Argentina, Buenos Aires, 1600 bags (lactic).
J. H. Schroeder Banking Corp., Indochinois, Havre, —, 500 bags, 50000 kilos.
F. H. Paul & Stein Bros., Indochinois, Havre, 263 bags, 21000 kilos.
F. H. Paul & Stein Bros., Indochinois, Bordeaux, 334 bags, 25000 kilos.
Hercules Powder Co., Flying Enterprise, Rotterdam, 2000 bags.

Woodpulp

Pulp Sales Corp., Sirius, Kotka, 1016 bls. white dry mechanically ground woodpulp, 630 bls. prime unbleached kraft sulphate pulp, 4142 bls. prime bleached extra strong sulphite pulp, 4830 bls. prime unbleached strong sulphite pulp.
Elof Hansson Inc., Excellency, Savona, 6185 bls. dry chemical pulp.
Spoic Corp., Examiner, Trieste, 1 pkge. woodpulp (sample).
Matu Trading Corp., Examiner, Trieste, 1 pkge. woodpulp (sample).
The Borregaard Co., Inc., Stockholm, Gothenburg, 254 bls. dry chemical pulp.

Woodpulp Boards

National City Bank, Hamina, Kotka, 273 rolls (solid white).
Parsons & Whittemore, Inc., Stockholm, Gothenburg, 366 bls., 79 rolls.

IMPORTS AT ALBANY

Week Ending Nov. 19

Pulp Sales Co., Hamina, Kotka, 1016 bls. white dry mechanically ground woodpulp, 2475 bls. prime unbleached strong sulphite pulp, 125 bls. prime bleached sulphite pulp, 265 bls. prime unbleached sulphite pulp, 2195 bls. prime unbleached kraft sulphate pulp.
National City Bank, Hamina, Kotka, 457 bls. prime unbleached kraft sulphate pulp.
Pulp Sales Corp., Hamina, Rauma, 508 bls. white dry mechanically ground woodpulp, 530 bls. prime unbleached extra strong sulphite pulp.
National City Bank, Hamina, Rauma, 132 bls. prime unbleached strong sulphite pulp, 630 bls. prime bleached strong sulphite pulp, 1575 bls. prime bleached sulphite pulp.

IMPORTS AT NEWARK

Week Ending Nov. 19

Pulp Sales Corp., Hamina, Kotka, 2540 bls. prime unbleached light & strong sulphate pulp, 592 bls. prime bleached extra strong sulphite pulp, 1540 bls. prime unbleached kraft sulphate pulp.
Pulp Sales Corp., Vretaholm, Helsingfors, 1270 bls. white dry mechanically ground woodpulp.
Madden Reeve Angel & Co., Inc., Vretaholm, Kotka, 145 rolls newsprint.
Pulp Sales Corp., Vretaholm, Kotka, 2666 bls. prime unbleached kraft sulphate pu'p, 571 bls. prime bleached sulphite pulp, 1560 bls. prime unbleached strong sulphite pulp, 1270 bls. white dry mechanically ground woodpulp, 555 bls. prime bleached sulphite pulp.
Pulp Sales Corp., Vretaholm, Jacobstad, 5300 bls. prime unbleached extra strong sulphite pulp, 3235 bls. prime unbleached sulphite pulp.
Pagel Horton & Co., Inc., Vretaholm, Gefle, 127 bls. woodpulp, 2000 bls. dry sulphite pulp.
Bulkley Dunton Co., Vretaholm, Gefle, 2032 bls. dry sulphite pulp.

IMPORTS AT BOSTON

Week Ending Nov. 19

(———), Black Eagle, Antwerp, 50 bls. cotton waste.

IMPORTS AT PHILADELPHIA

Week Ending Nov. 19

Pulp Sales Corp., Hamina, Kotka, 2959 bls. prime bleached extra strong sulphite pulp.
Jay Madden Corp., Hamina, Rauma, 364 rolls wrapping paper.
Madden Reeve Angel & Co., Inc., Mormacyork, Kotka, 684 rolls wrapping paper.
Jay Madden Corp., Mormacyork, Kotka, 98 rolls wrapping paper.
Pulp Sales Corp., Mormacyork, Kotka, 1775 bls. prime bleached extra strong sulphite pulp, 1560 bls. prime unbleached strong sulphite pulp, 508 bls. white dry mechanically ground woodpulp.
(———), Venezuela, Gdynia, 3024 bls. prime bleached sulphite pulp, 473 bls. prime strong unbleached sulphite pulp.
Madden Reeve Angel & Co., Inc., Vretaholm, Kotka, 308 rolls newsprint.
Pulp Sales Corp., Vretaholm, Kotka, 3395 bls. prime unbleached kraft sulphate pulp, 200 bls. prime unbleached light & strong sulphate pulp, 542 bls. prime strong unbleached sulphite pulp, 1400 bls. 3rd quality unbleached sulphite pulp, 225 bls. prime unbleached bleachable sulphite pulp, 240 bls. prime unbleached easy bleaching sulphite pulp.
Pagel Horton & Co., Inc., Vretaholm, Gefle, 162 bls. woodpulp, 3500 bls. dry sulphite pulp.
Castle & Overton, Inc., Vretaholm, Gefle, 610 bls. unbleached sulphite pulp.
Gottesman & Co., Inc., Kristina Thorden, Sundsvall, 3300 bls. prime unbleached strong pulp; S/S Uddeholm, Iggesund, 1,450 bls. bleached sulphite pulp.
N. Schwab, American Chief, Manchester, 50 bls. cotton waste.
Leigh Textile Co., American Chief, Manchester, 86 bls. bagging.
E. J. Keller Co., Inc., American Traveler, Liverpool, 116 bls. jute waste.
Leigh Textile Co., American Traveler, Manchester, 87 bls. bagging.
1st National Bank Philadelphia, American Traveler, Glasgow, 165 bls. jute waste.
R. F. Downing & Co., Indochinois, Havre, 10 cs. wallpaper.
Gottesman & Co., Inc., S/S Mormacmail, Stockholm, 3,556 bls. bleached sulphite pulp; S/S Hoyanger, Utansjo, Stockholm, 12,000 bls. unbleached sulphite pulp; Sandvikens, Stockholm, 4,800 bls. unbleached kraft pulp.

IMPORTS AT BALTIMORE

Week Ending Nov. 19

Pulp Sales Corp., Mormacyork, Helsingfors, 1016 bls. white dry mechanically ground woodpulp.

Pulp Sales Corp., Mormacyork, Kotka, 2235 bls. white dry mechanically ground woodpulp.

Pulp Sales Corp., Sirius, Kotka, 770 bls. prime unbleached strong sulphate pulp, 530 bls. prime unbleached strong sulphite pulp, 770 bls. prime unbleached sulphate pulp.

W. C. Jones, Vibeke Maersk, Rouen, 60 bls. cotton waste.

IMPORTS AT NORFOLK

Week Ending Nov. 19

E. J. Keller Co., Inc., American Traveler, Glasgow, 82 bls. bagging.

(——), American Traveler, Glasgow, 116 bls. old bagging.

Darmstadt Scott & Courtney, American Traveler, Manchester, 57 bls. old bagging.

New England Waste Co., Flying Enterprise, Rotterdam, 81 bls. cotton waste.

IMPORTS AT WILMINGTON

Week Ending Nov. 19

Scott Paper Co., Esther Thorden, Hantsport, Nova Scotia, 12,417 bls. mechanical ground woodpulp.

Canadian Imports-Exports, Sep't.

OTTAWA—Shipments into Canada of paper advanced to $1,636,000 during September as compared with $1,291,000 in the same month a year ago. Such imports in the first nine months of 1949 showed paper rose to $14,673,000 compared with $12,879,000 a year ago in the similar period.

Canadian exports of newsprint paper dropped to $32,681,000 during September as compared with $36,939,000 a year ago in same month. Exports of other paper declined to $1,358,000 in September as against $2,769,000 last year. Exports of newsprint paper advanced to $310,180,000 during the first nine months of 1949 as against $277,953,000 in the same period of 1948. Shipments of other paper out of Canada declined to $14,978,000 in this period compared with $25,275,000 a year ago.

TRAFFIC

Route Designation Rights

By EDWIN CHESTER HASTINGS

PITTSBURGH — The Interstate Commerce Act, Part I, Section 15 (8), provides the legal right to those shipping freight by rail to designate routing on the bill-of-lading. The same section states that the carrier's duty is to transport as directed. Where there are several competing lines of railroad offering service to participate in the route, "the shipper's right" determines which line hauls the lading. Under the law, the carrier cannot in any way change the route on the bill-of-lading without written authorization from the shipper.

Purpose of this is to give the same right to the small firm shipping a car once a month as the large firm shipping several cars each day.

The "right to route," however, does not give the shipper the privilege to pick railroads at random. The route must be published in a tariff and while the tariff will show one or more junction points where the connecting carrier interchanges with the other, the shipper should not place "junctions" in the route on the bill-of-lading, for the main reason that such junctions may not apply.

Another protection the shipper has under the ICC Act is a rate on the lading that will produce the lowest freight charges. It should be understood that the shipper can not use "any rate" or "any route" but must use the rate or rates *that apply* over the route or routes designated in the tariffs.

The particular reason for the preceding information is to be explicit that the lower rates will not apply unless one follows the instructions in the tariff on routing related to the following commodity:

On November 20 there will be effective specific commodity rates on Pulpboard or Fibreboard that are lower than regular rates in the same tariff *if the shipper selects one of the routes* listed in the item.

The tariff is *Paper and Paper Articles*, also *Wallboard*, Agent D. Q. Marsh, *Southwestern Lines' Tariff # 281*. Application of rates are on *carload* shipments, from 33 states in the East-South-West-Southwest to the Southwest.

The tariff specifies in Item 700, Section 7, page 71: *Where routing is specified in connection with particular rates, such rates apply only via routes specified.*

Supplement 12 to SW 281, effective November 20, Item 280, page 3, commodity rates as follows: "Pulpboard or Fibreboard, not-otherwise-indexed-by-name, not corrugated, paper or pulp lined or not lined, fibre content consisting of *not less than 80 percent* wood pulp, waste paper or straw pulp or mixture thereof, in straight or mixed carloads, minimum weight 50,000 pounds."

The rates do not apply from or to intermediate stations; they are not subject to Tariffs of Increased Rates (X-168-A); they do not apply on building, wall or insulating board; nor on box blanks, creased, corner cut, and cut to shape; nor on pulpboard or fibreboard faced with foil.

A rate of 30½c per 100 pounds is provided from Hutchinson, Kan., to Acme, Texas, *if one of these routes are used:* AT&SF, P&SF, FtW&DC, CRI&P, FtW&DC, QA&P, CRI&P, StL-SF, StLSF&T, QA&P, MP, StL-SF&T, QA&P, MP, StL-SF, StLSF&T, FtW&DC.

36½c to Celotex, Texas, AT&SF, P&SF, AT&SF, P&SF, MKTT, CRI&P, MKTT, WV, MKTT, MP, MKT, MKTT, WV, MKTT.

36½c to Rotan, Texas, (same routes as above).

43½c to Sweetwater, Texas, AT&SF, P&SF, AT&SF, GC&SF, CRI&P, T&P, MP, KOG, D&PS, T&P.

A rate of 31½c is provided from Kansas City, Mo., to Southard, Okla., if routed StL-SF direct.

43½c to Sweetwater, Texas, AT&SF, P&SF, AT&SF, GC&SF, CRI&P, T&P, KCS, KOG, D&PS, T&P, MKT, MKTT, T&P, MP, KOG, D&PS, T&P, StL-SF, StLSF&T, T&P.

As an example of saving freight charges, contrast the rates quoted with other rates in this tariff. The tariff provides "Distance Scales of Rates" based on mileage between points. The distance from Kansas City to Sweetwater is 625 miles. The item as herein described with a minimum weight of 36,000 pounds has rate basis F (this is 29 percent of the first class rate) and the rate is 64c (per cwt).

Distance rates are computed in the following manner on Paper and Paper Articles, also Wallboard (the tariff has four separate sections related to rates): Section 1 rates are specific commodity rates on Newsprint and Groundwood Papers (fibre content not less than 60 percent) minimum weight 40,000 pounds, from Herty, Texas, to Dodson, Mo., 57c; Poplar Bluff, Mo., 50c; Ft. Smith, Ark., 44c; same rate to Marion, Okla.; Muskogee, Oklahoma City, Okmulgee, Seminole, Shawnee, Tulsa, Wewoka, Okla.; Helena, Ark., 45c; Lake Charles, La., 31c.

The rates quoted are from Supplement 13, effective November 30, as also the following on Paper (wrapping) and/or Paper Bags from Camden, Ark., to Baldwin and Pine Bluff, Ark., 22c; from Crossett, Ark., to the same towns, 26c.

These rates do not alternate with other rates in the tariff, they apply regardless of those found in other sections.

Section 2 are rates applied on Paper and Paper Articles, and Section 3 the rates on Wallboard from East-South-West-Southwest to the Southwestern Gateways. A "gateway" is a point on the river or where the location borders on two territories. An example: The Mississippi and Ohio Rivers are considered division lines between territories.

The following are typical Southwestern Gateways: Baton Rouge, Boonville, Cairo, East St. Louis, Flinton, Helena, Kansas City (Mo.), Memphis, Natchez, New Orleans, Thebes, Vicksburg. There are other gateways, but in this tariff those above are the only ones permitted.

The distances shown in Section 4 are for the purpose of computing rates from origin to destination. Part 1 shows the distance from the origin to SW Gateway; Part 2, the distance from the river point to destination. The two added are for total mileages and the resulting figure is used to find the rate in Section 2 or 3.

In Sections 2 and 3 there are six

columns headed with a "letter" rate basis, they are, A to F inclusive. The letter is used instead of class rating percentage.

The rate basis letters used in the tariff should agree with the percentages prescribed by the ICC order I. and S. No. 5392. *Pulpboard,* not less than 80 percent wood pulp, corrugated, 24,000 pounds subject to CFC's Rule 34, not corrugated, 36,000 pounds *wallboard,* 36,000 *newsprint paper,* 40,000 pounds. On these, the ICC prescribed 29 percent of the first-class rate set out in appendix E to the report in Eastern Class-Rate Investigation, 164 ICC 314, 467, increased as authorized in 1938. The rates on *wallboard* from Pensacola, Fla., are not to exceed the highest rate of those from Mobile, Ala., and Laurel and Meridian, Miss., to the same destinations. In the SW 281 paper tariff, the rate basis F is used for the 29 percent. For *pulpboard,* fibre content less than 80 percent wood pulp, the ICC prescribed 31 percent of the first-class rate. In the tariff the rate basis E is used for this percentage. For wrapping paper, printing paper, bags, dishes, pails, plates, trays, boxes, the ICC prescribed 32½ percent. In the tariff for this percentage, rate basis D is used.

For low-value school supplies, such as school blanks or forms, loose leaf fillers, blank books, pads, 36,000 pounds minimum weight, the ICC prescribed 35 percent of the first-class rate. In the tariff for this percentage, rate basis C is used. For tissues, toilet, napkin, table cloths, 24,000 pounds, the ICC prescribed 36 percent of the first-class rate. In the tariff for this percentage, rate basis B is used.

For envelopes, seed packets, papeteries, binders and covers, 30,000 pounds, the ICC prescribed 40 percent of the first-class scale and in the tariff for the percentage, rate basis A is used.

Supplement 14 to this tariff becomes effective December 1 and attention is called to the application of "Note 17" which is added to the tariff on the above date. The "Note" allows two or more paper articles to be shipped in *mixed carloads,* subject to a minimum weight of 30,000 pounds. In some cases the minimum weight is decreased from 36,000 but the rate is increased from 32½ percent and 35 percent to 40 percent. The provision applies in several states of the territories covered by the tariff. (Item 260, page 5.)

Supplement 14 adds this Note 17 to the list of paper and paper articles: *Printing paper,* other than newsprint, exclusive of ground wood paper, 36,000, rate basis D (32½ percent); *Writing paper,* (same as above); *Loose leaf book fillers,* 36,000, rate basis C (35 percent); and *Pads,* tablets, blank books, pulpboard covers, (same as above).

There are other paper and paper articles where Note 17 will apply on December 1. They are not listed here for the reason they are already rated 40 percent of the first-class rate and the 30,000 pounds minimum weight.

NAWMD Seeks Freight Cut

NEW YORK—An "over-all" freight rate reduction of approximately 25.4 percent is sought in the request which has been submitted to the Railroads' General Freight Traffic Committee by the Waste Material Industry Transportation Committee, representing the National Assn. of Waste Material Dealers, Inc.; New York Ass'n. of Dealers in Paper Mills' Supplies, Inc.; Philadelphia Waste Merchants Ass'n. and Waste Paper Institute.

According to Charles J. Browne, New York, the committee's general counsel, the proposal seeks reductions ranging from 20.5 percent to 29.4 percent in the prevailing freight rates on rags, waste paper, and related waste materials.

Highlights in the 15-page brief, which was prepared and filed by Mr. Browne, list the following in detail: (a) Existing conditions in the industry brought about as a direct result of the various increases in freight rates authorized by the Interstate Commerce Commission since June 30, 1946. (b) The effect such increases have had on the industry in general, as well as on railroad traffic. (c) The need for a general downward revision of freight rates. (d) The basis on which the relief sought by the industry should be predicated, namely, 125 percent of the rates that were in effect on June 30, 1946.

The proposed revision in freight rates covers movements within and between points in Official and Southern Classification territories; within Western and Southwestern territories; and between Western and Southwestern territories, on the one hand, and, on the other, Official and Southern Classification territories.

Members of the Transportation Committee who worked with Mr. Browne in assembling and preparing the industry's case include Miss Shirley Rief, Atlantic By-Products Co., New York, vice-chairman of NAWMD traffic committee; Walter H. Martens, Geo. W. Millar & Co., New York, chairman of the transportation committee of the New York Ass'n. of Dealers in Paper Mills' Supplies, Inc.; John Middleton, traffic manager, Pioneer Paper Stock Co., Chicago; Harris Goldman, Harris Goldman Co., Inc., New York, chairman of the N.A.W.M.D. traffic committee; and Paul Jos. White, Great Eastern Packing & Paper Stock Corp., New York, chairman N.A.W.M.D. finance committee.

ICC Regulations Challenged

WASHINGTON—The National Council of Private Motor Truck Owners, Inc., has formally recorded its objections to proposed regulations of the Interstate Commerce Commission governing motor vehicle leasing arrangements which were the subject of a recent recommended report by its Examiner Henry C. Lawton, issued in August, 1949.

In a brief of "exceptions" filed with the Commission on November 1 in its proceeding known as *Docket Ex Parte MC-43,* the National Council has challenged the Commission's authority to promulgate rules or regulations governing the leasing of motor vehicles by or to private truck operators, or to restrict the right of such operators to augment their equipment or facilities as their business demands. The Commission was informed by the Council that the leasing rules being proposed are "neither necessary, warranted, reasonable, nor valid" and that their adoption would impose unnecessary and invalid burdens and restraints upon all types of carriers and shippers alike, as well as upon interstate commerce in general, contrary to the national transportation policy as expressed by Congress.

Particular objection was entered against a proposal to abolish or restrict "trip" or short-term leases of equipment by placing a 30-day time limitation on such arrangements when made by private carrier or truck rental company lessors to regular "authorized" carrier lessees.

Ohio Liberalizes Weight Law

COLUMBUS, Ohio — The new weight law for Ohio, recently put into effect, liberalizes the axle, tandem and gross weights permitted on Ohio highways. This new law provides: (1) 19,000 pounds per single axle. (2) 31,500 per tandem axles. (3) A modified bridge formula which permits only one tape measure, namely, from the steering axle to the rear-most axle. (4) Gross weight will be calculated on the formula of 38,000 pounds plus (800L) L meaning number of feet from steering axle to rear-most axles. (5) Maximum gross load 78,000 pounds. (6) Length —No change in law—truck 35 feet, tractor and semi 45 feet, double bottom 60 feet.

Canadian Canal Traffic, September

OTTAWA—Canadian Government reports tonnage of freight passing through canals during September this year showed the following, with figures for same month last year in brackets: Welland Ship Canal, 2,000 (4,566) tons, woodpulp, 30,052 (20,946) tons, paper; Sault Ste. Marie Canals, Canadian Lock, 6,820 (23,722) tons, pulpwood, Canadian & U. S. Locks, 41,120 (105,636) tons, pulpwood; St. Lawrence Canals, 3,100 (4,566) tons, woodpulp, 15,884 (7,141) tons, paper.

Canadian Carloadings

OTTAWA—Cars of revenue freight loaded on the Canadian railways in the week ending October 29 was 4,090 cars of woodpulp and paper as compared with 4,256 in the preceding week and 4,197 in the similar week of last year, the Canadian government reports.

In the Eastern Division, such loadings totaled to 3,600 cars this week as

against 3,758 in the previous week and 3,609 in the similar week a year ago, with the Western Division reporting 490 cars in the week ended October 29 compared with 498 in the preceding week and 588 in the similar week last year.

Cumulative total of such loadings of woodpulp and paper was 167,868 cars from the first week of this year until the week ending October 29 as against 182,414 a year ago, with the Eastern Division showing 146,830 cars this year as compared with 158,756 in the same period last year and the Western Division 21,038 this year as against 23,658 cars in the similar period a year ago.

N. C. Shippers Oppose Frt. Boost

RALEIGH, N. C. — Spokesmen for North Carolina's major railroad shippers told the state utilities commission on November 10 that a proposed ten percent increase in freight rates would handicap many businesses.

The application was opposed by the Champion Paper & Fibre Co., Charlotte Shippers and Mfr's., Ass'n., North Carolina Traffic League, the Charlotte Chamber of Commerce, Western North Carolina lumber firms, and others.

LETTERS

Dear Sirs:

Thank you for calling to my attention the item concerning me which appeared on page 30 of the October 27th issue. However, may I advise that the item referred to my secondary activities in the fields of water and waste treatment and failed to mention my primary field of activity. I intend to serve the paper industry particularly in connection with problems and developments in paper coating and also in sizing, based on more than 25 years of experience with protein materials and their applications. I would appreciate correction of the earlier item if you can conveniently do so.

N. R. GOTTHOFFER
Chemical Consultant
Cincinnati, Ohio

Dear Miss Nuttall:

Regarding your November 10 issue of the "Paper Trade Journal," please be advised that according to the current Export Bulletin No. 551, released by the OIT on October 31, rayon and special chemical grades of bleached sulphite wood pulp were retained on the positive list.

According to this Bulletin, condenser tissue, capacitator tissue and Masonite were taken off the positive list and placed under general license for exportation to all destinations.

ERIC G. LAGERLOEF
Administrative Assistant
American Paper & Pulp Assn.
New York, N. Y.

Gentlemen:

In the "Paper Trade Journal" of September 29, 1949, page 18, we have read a notice regarding the plans for our own mill.

We beg to draw your attention to the fact that instead of SULPHITE must be read SULPHATE; supposing this due to a lapse.

Therefore you will oblige by in a future copy of your publication to correct said word. However we presume that people knowing the matter may understand the mistake as in the bottom of the article kraft paper is mentioned.

COMPANHIA PORTUGUESA DE CELLULOSE
Lisboa, Portugal

AWARDS

Army Award Made

N. Y. QM Purchasing Office

QM-30-280-50-119, covering 1,500 M Form, Tab., 14⅞x11, at $30.66 M, to the Uarco Inc., Deep River, Conn. Directive quantity was 1,500 M. This procurement is for the U. S. Army.

QM 30-280-50-177, covering Paper, Corrugated, Single-Face, as follows:

Sherman Paper Prod. Corp., Newton Upper Falls, Mass.—6,652 rolls, $3.48 to $6.66.

Bemiss-Jason Co., San Francisco—2,548 rolls, $4.64 to $6.63.

Directive Quantity: 9,000 rolls.

This procurement is for the U. S. Army.

QM 30-280-50-179, covering Miscellaneous Paper Items, to:

W. C. Hamilton & Sons, Miquon, Montgomery Co., Pa.—Paper, Map, Lithograph, 35 x 45 — 2,500 reams from $14.958 to $15.988.

Stanford Paper Co., Washington, D. C.—Paper, Blotting, Photo, 24 x 24—4,300 dz. from $.6371 to $.7221.

Walker-Goulard-Plehn Co., New York—Paper, Drawing, Unmounted, 22 x 30—1,500 dz. @ $.782; Paper, Map, Lithograph, 19 x 20—1,400 reams from $2.80 to $3.13; Paper, Map, Lithograph, 22 x 29—1,300 reams from $4.64 to $5.18.

J. H. Weil & Co., Phila., Pa.—Paper, Tracing, White, 42" x 20 Yd.—1,450 rolls from $2.10 to $2.15.

Kennelly Paper Co., New York—Paper, Masking, 28 x 30—300 reams @ $10.62.

Mohawk Tablet Co., Chicago—Filler, Binder, White, 8½ x 11—13,200 packages from $.07 to $.076.

Bee Paper Co., Brooklyn, N. Y.—Paper, Cross Section, 8½ x 11—1,500 pads from $.2475 to $.2875; Paper, Drawing, White, 36" x 10 yd.—1,000 rolls from $7.17 to $7.45.

Standard Scientific Supply, New York—Paper, Filter, Quantitative—1,000 boxes @ $1.64.

This procurement is for the U. S. Army (Engineer Corps).

QM 30-280-50-195, covering Wadding, Absorbent and Non-Absorbent. Directive quantity: 17,486 rolls. Awards were made as follows:

Sitroux Inc., New York—6,175 rolls (Absorbent) from $1.98 to $3.79.

Kimberly Clark Corp, Neenah, Wis.—12,436 rolls (Non-Absorbent) from $3.41 to $10.22.

This procurement is for the U. S. Army.

Award has also been issued on QM 30-280-50-217, covering Paper, Teletype Machine, White, 3,908,350 sets, at $7.24 M to $11.40 M, to Moore Business Forms, Inc., New York. Directive quantity: 3,508,350 sets.

This procurement is for the U. S. Air Force.

QM-30-280-50-127, covering Item 1—Pad, Memo, white, ruled, 6x9; Item 2—Pad, Memo, white, ruled, 8x10½, and Item 3—Pad, Memo, white, plain, 3x5, to:

Boston Paper Co., Boston, Mass.—1,500,000 each Item 3—$.01246-$.01337.

School Stationers Corp., Neenah, Wisconsin—350,000 each Item 2—$.0709-$.0795.

Universal Pad & Tablet Corp., New York, New York—300,000 each Item 1—$.0442-$.0462.

Universal Pad & Tablet Corp., New York, New York—100,000 each Item 2—$.0678.

Universal Pad & Tablet Corp., New York, New York—1,000,000 each Item 3—$.0156.

Mohawk Tablet Co., Chicago, Illinois—175,000 each Item 1—$.05375.

Directive quantity: 925,000 each. This procurement is for the U. S. Army.

QM 30-280-50-169, covering Tape, Blank, Recording, to the Paper Mfg. Co., Philadelphia, Pa., as follows: Item 1—Perforator 50,500 each $.203 to $.216; Item 2—Teletype 1,025,000 each $.186 to $.20; Directive Quantity: 1,065,500 each. This procurement is for the U. S. Army (Signal Corps).

QM 30-280-50-162, covering Paper, Typewriter, Bond, (various). Directive quantity: 292,774 reams. Awards were made as follows:

Boston Paper Board Co., Boston — 45,850 reams from $.428 to $.5474.

Eastern Corp., Bangor, Maine—168,854 reams from $.454 to $.585.

Marquette Paper Corp., Chicago — 78,070 reams from $.4788 to $.6264.

This procurement is for the U. S. Army.

QM 30-280-50-201, covering Twine, Cotton, Wrapping, 12 Ply, 2 lb. Cone—50,000 lbs., @ $.5187 and $.5437, to Shuford Mills, Inc., Hickory, N. C. Directive quantity: 50,000 lbs. This procurement is for the U. S. Aarmy.

Navy Awards Made

N. Y. Navy Purchasing Office

Awards have been made by the Navy Purchasing Office, 111 East 16th street, New York, N. Y., on Bags, various sizes—2,337,000 each, to:

Atlantic Bag & Paper Co., Jacksonville, Florida —44,000 Bags @ $5.11 per M.

Arlington Sales Agency, Inc., New York, N. Y.—568,000 Bags @ $1.08 to $5.33 per M.

Raycarr Sales Co., New York, N. Y.—162,000 Bags @ $1.81 per M (2% 10 days).

Old Dominion Paper Co., Norfolk, Va.—456,000 Bags @ $1.72 to $7.10 per M.

Zellerbach Paper Co., San Francisco, Calif.—84,000 Bags @ $2.678 per M.

Haas Brothers, San Francisco, Calif.—511,000 Bags @ $.98 to $1.72 per M (2% 30 days).

Inv. No. 5573—Covering paper, manifold, substance M, (17x22) Type IV, 25 percent rag—Various 28,410 reams, to the following:

Walker-Goulard-Plehn Co., Inc., New York—8,650 reams @ $.28 to $1.86 per ream. 1% 10 days.

Marquette Paper Corp., Chicago—17,560 reams @ $.399 to $2.30 per ream.

Bermingham & Prosser Co., N. Y. C.—2,200 reams @ $1.685 to $1.85 per ream.

Inv. No. 5651, Pads, Memorandum, white groundwood (60%) various, 367,000 each, to the following firms.

Mohawk Tablet Co., Chicago, Ill.—312,000 pads,—$.0379 to $.0889 each.

Boston Paper Board Co., Boston, Mass.—55,000 pads—$.0351 to $.0424 each.

OBITUARIES

George M. Dunning, director of Eastern sales of the Michigan Alkali division, Wyandotte Chemicals Corp., with offices in New York, died on November 16. He is survived by his widow, Mrs. Frances L. Dunning; a son, George M., Jr.; and three daughters, the Misses Frances Virginia and Dorothea Dunning, and Mrs. Audrey Neuburg.

George H. Souther, Sr., 85, retired head of the American Papeterie Co., and The Eastern Tablet Co., Hudson, N. Y., sold to the United Drug Co., in 1920, died on November 9 at his home in Columbiaville, N. Y. Surviving are his widow, Mrs. Josephine Hawley Souther; a daughter, Mrs. Marion Kerr; and a son, George Souther, Jr.

Harry T. Gisbourne, 56, chief of the division of forest fire research of the Northern Rocky Mountain Forest and Range Experiment Station, died in Missoula, Mont., on November 9 of a heart attack while examining the burned-over area where 13 fire fighters lost their lives last August.

Albert D. Lorenz, vice-president and director of D. Benedetto, Inc., New York, and its subsidiaries in the U. S., and Canada, died in Hackensack Hos-

Silicone News

DC SILICONES

DC 1107 SILICONE

"abhesive"

KEEPS RUBBER, ASPHALT AND PRESSURE SENSITIVE TAPES FROM STICKING TO PAPER

We've coined a word to describe the remarkable release characteristic imparted to paper by DC 1107. This invisible silicone coating developed by Dow Corning makes paper completely "abhesive" to materials like rubber, asphalt and adhesive tapes that normally stick to any surface.

An emulsion or a solvent solution of DC 1107 is easily applied by dip or roller coating and quickly cured by heating for 30-60 seconds at 250°F. Experimental mill runs indicate that there is a large market for DC 1107 treated, "abhesive" paper as inter-leaving sheets for uncured rubber, camelback, tire tube patches, pressure sensitive tapes of all kinds and for bag stock to be used in shipping such sticky materials as tar and asphalt.

MAKES PAPER WATER REPELLENT

prevents initial wetting, maintains initial tensile strength and tear resistance for a relatively long period of time in contact with water.

For more information about DC 1107 phone our nearest branch office or write for Data Sheet AB-11

DOW CORNING CORPORATION
MIDLAND, MICHIGAN

Atlanta • Chicago • Cleveland • Dallas
Los Angeles • New York
In Canada: Fiberglas Canada, Ltd., Toronto
In England: Albright and Wilson, Ltd., London

FIRST in Silicones

Dow Corning

ptal, Hackensack, N. J., on November 16, following a two-week illness. He has been associated with the Benedetto organization for 26 years. Surviving are his widow, Mrs. Meta F. Lorenz; and a daughter, Mrs. Arthur J. Gude.

H. Floyd Medlin of the accounting department of the Gulf States Paper Corp., Tuscaloosa, Ala., died of a heart attack on November 10 while enroute to a hospital in an ambulance. Surviving are his widow, Mrs. Mary Ethel Medlin; and two sons, Floyd and Harold.

John L. Michel, Jr., 35, personnel director of the National Vulcanized Fiber Co., Wilmington, Del., died at his home in Yorklyn, Pa., on November 16. He is survived by his widow, Mrs. Gladys J. Michel; a son, John L., III; his parents, and a brother, Richard.

Daniel B. DeLand, 64, assistant to the vice-president in charge of manufacture of the American Can Co., New York, died at his home in that city on November 14. Surviving are his widow, the former Esther Durgin; two sons and five sisters.

Charles Clinton Sheppard, 74, president of the Louisiana Central Lumber Co., Clarks, La., died suddenly at his home in that city recently. Mr. Sheppard, who was widely known in Southern lumber and pulp circles, was president of the National Lumber Mfr's., Ass'n., for two terms, president of the Southern Pine Ass'n., for three terms, and served as a director of the National Ass'n., of Manufacturers.

Millard F. Richardson, 67, accountant at the Kalamazoo Paper Co., Kalamazoo, Mich., since 1918, died of a heart ailment in a local hospital on November 16. A sister and a brother survive him.

Robert Gell, superintendent of the Rochester Box & Lumber Co., Rochester, N. Y., died in that city on November 12. Surviving him are his brother, John; a sister, Miss Frances Ellen Gell; and a son, Dr. Kenneth E. Gell.

John L. Oglesby, 58, veteran sales representative of the Tayloe Paper Co., Memphis, Tenn., died of a heart attack on November 13. Surviving him are his widow, a son and a daughter.

George Wesley Hayes, 59, sales manager of the Early Paper Co., New Haven, Conn., died on November 14. Mr. Hayes' home was in Springfield, Mass.

O. Maurice Shelley, 49, sales engineer for National Starch Products, Inc., Chicago, was killed on November 10 when his auto was struck by a train near Barrington, Ill.

AMERICAN PAPER AND PULP ASSOCIATION'S PRODUCTION RATIO REPORT*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1949		Corresponding Weeks—1948	
Oct. 8	96.6	Oct. 9	98.4
Oct. 15	97.9	Oct. 16	99.9
Oct. 22	99.0	Oct. 23	98.7
Oct. 29	98.5	Oct. 30	99.3
Nov. 5 (Revised)	99.3	Nov. 6	97.0
Nov. 12	100.1	Nov. 13	100.8

COMPARATIVE MONTHLY SUMMARIES

1948						1949	
Jan.	100.1	May	100.5	Oct.	99.1	Jan.	94.6
Feb.	99.8	June	95.7	Nov.	97.1	Feb.	92.8
Mar.	100.8	July	85.3	Dec.	87.1	Mar.	89.1
Apr.	100.8	Aug.	96.8			Apr.	85.1
		Sept.	91.8	Year Avg.	96.2	May	82.7
						June	78.6
						July	72.8
						Aug.	‡88.0
						Sept.	‡90.3
						Oct.	‡98.0

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1942	1943	1944	1945	1946	1947	1948	1949
Year to Date	91.7	88.4	88.5	89.4	101.3	104.3	97.2	87.9
Year Average	90.4	87.8	88.1	89.4	101.1	104.3	96.2	

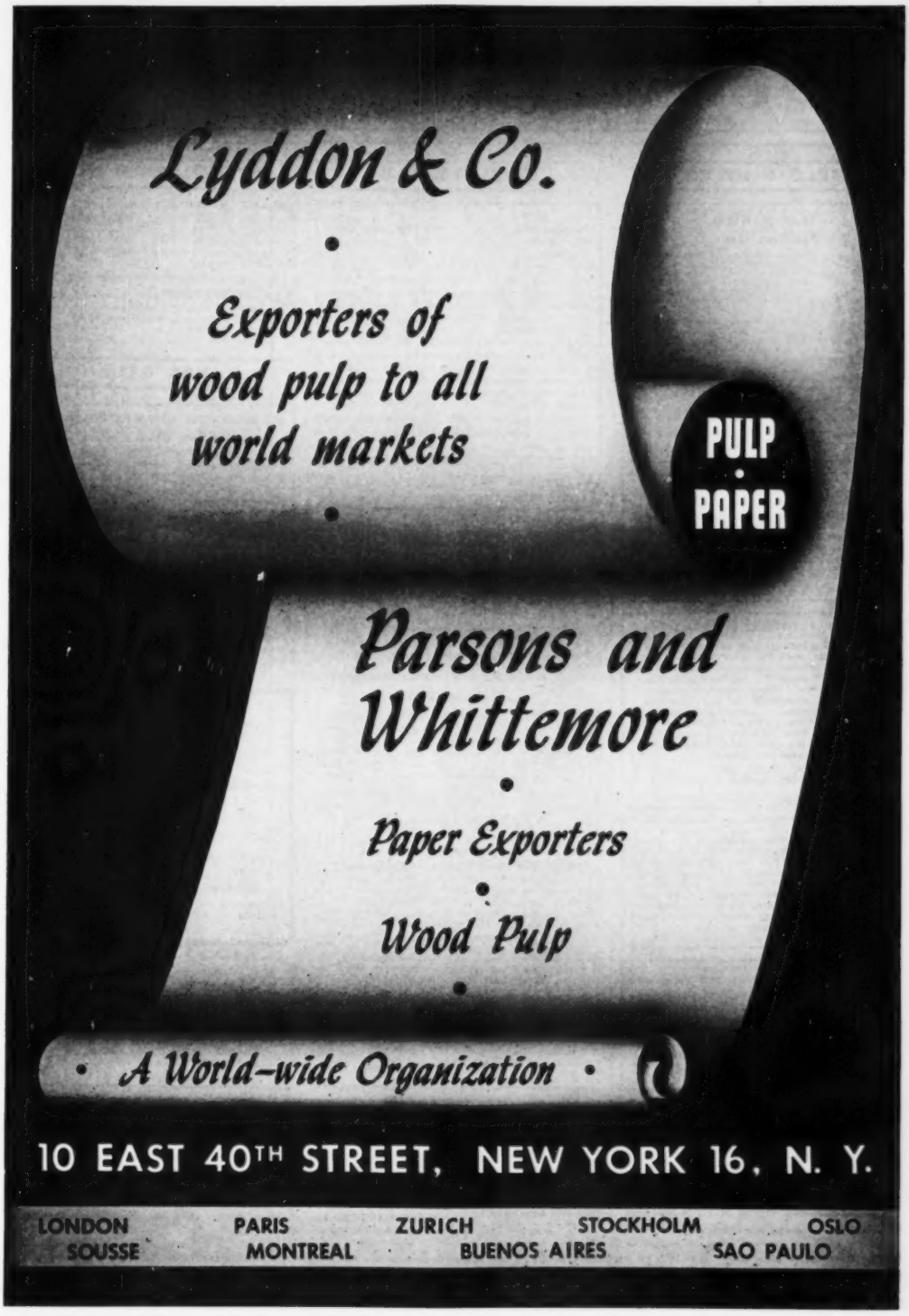
PAPERBOARD OPERATING RATIOS†

Current Weeks—1949		Corresponding Weeks—1948	
Oct. 8	92	Oct. 9	96
Oct. 15	94	Oct. 16	97
Oct. 22	94	Oct. 23	95
Oct. 29	94	Oct. 30	96
Nov. 5	92	Nov. 6	95
Nov. 12	94	Nov. 13	96

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1948	99	100	102	102	100	94	81	92	91	96	94	84	95
1949	88	85	79	79	78	75	64	86	87	94			

* All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.


Lyddon & Co.
Exporters of wood pulp to all world markets
PULP
PAPER
Parsons and Whittemore
Paper Exporters
Wood Pulp
A World-wide Organization
10 EAST 40TH STREET, NEW YORK 16, N. Y.
LONDON PARIS ZURICH STOCKHOLM OSLO
SOUSSE MONTREAL BUENOS AIRES SAO PAULO

CLEARING HOUSE

HELP WANTED

MEN WANTED
Positions Open

President and Manager for company manufacturing lightweight papers; kraft pulp mill superintendent; general superintendents for mills making book, offset, wall board, specialties, bond, envelope, mimeograph, writing, glassine and greaseproof papers; general superintendent folding box board mill superintendent wet machine board mill.

Chemists and chemical engineers (several); foreman paper coating; Fourdrinier and Cylinder machine foreman up to $6,000 year.

Chief power plant engineers; master mechanics; millwrights; salesmen to sell book, envelope, offset, index bristol, sulphite bond, ledger, board and other papers, also paper bags; beater engineers; machine tenders and back tenders.

We invite correspondence (confidential) with executives seeking positions and with employers seeking new personnel.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington Street, Boston, Mass. N-24

WANTED—Man 25 to 30 age—with degree in chemistry or chemical engineering, one to three years experience in research in one of following industries: food packaging, paper, paper converting, coating. Large food company offers good opportunity for right man. Please submit complete resume and expected salary. Address Box 49-562, care Paper Trade Journal. N-24

SALARIED POSITIONS $3,500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (29 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
117 Dun Bldg., Buffalo 2, N. Y.
TF

WANTED—Mechanical engineer for plant layout, machine design and process engineering, capable of design and drafting work. Permanent position with advancement for qualified man. Paper or board mill experience desirable but not essential. Give complete information in first letter including references and salary requirement. Address Box 49-532 care Paper Trade Journal. D-29

WANTED: Experienced steam and power plant Engineer for a Paper Mill having two 500 H.P. modern boilers and 1000 KW generating capacity.

Prefer man with paper mill experience. Give age, qualifications, and salary expected. Box No. 42-560 care Paper Trade Journal. D-1

HELP WANTED

Position is open for a finishing room foreman in our plant. Age 35-40 or thereabout. Products are toilet paper, napkins, printed and unprinted, waxed papers, such as household rolls, other sundry specialties, paper from duplex cutter and rewinder. Other operations include cutting and packaging of fruit and bottle wraps from our five rotary printing presses, the presaroom having its own foreman. We are looking for a man who will guarantee efficient, orderly operation on a good sensible relationship basis with labor. Good mechanical knowledge is important. Applications should be addressed to Fernstrom Paper Mills, Inc., P. O. Box 119, Pomona, California, attention of the President, who will treat them confidentially. N-24

WANTED by paper machinery manufacturer located in East an experienced Erecting Supervisor for field work. In reply give age and qualifications. Address Box 49-559 care Paper Trade Journal. D-1

SALESMAN for Metropolitan New York. Salary basis. Desired by National bag manufacturer. Prefer man with multiwall experience. All replies strictly confidential. Our employees know of this advertisement. Address Box 49-561 care Paper Trade Journal. D-1

ADJUSTER—Paper Bag Machines, Potdevin and Lockport flat, square, sack, New York City. Excellent opportunity. State experience. Address Box 49-542 care Paper Trade Journal. D-29

MACHINE TENDERS WANTED — Fully experienced on following-folding, set-up and test liner grades. Good steady job. Reply to Ollie Messner, Sangamon Paper Mills, Inc., Eaton, Indiana. N-24

CYLINDER MACHINE TENDERS experienced on Corrugating Medium. Union scale wages. References required. STOCKPORT PAPER CORPORATION, Stockport, N. Y. D-1

SALESMEN WANTED by Manufacturer of Paper Napkins and Toilet Tissue. Men with experience to call on Paper Jobbers and Chain Grocers. Territories open New York State, Ohio, West Pennsylvania and Florida. Address Box 49-552 care Paper Trade Journal. N-24

EXPERIENCED Paper Mill Millwright qualified for maintenance of Fourdrinier Machine. Address Box 49-553 care Paper Trade Journal. N-24

CLASSIFIED ADS
BRING RESULTS

SITUATIONS WANTED

PLANT MANAGER—Board and paper conversion; employed; seeks opportunity in company needing cost-minded executive with proven production record and excellent labor relations history. Address Box 49-528 care Paper Trade Journal. N-24

MACHINE TENDER wants position on Board Machine. Light or heavy weights. Best of references. Address Box 49-549 care Paper Trade Journal. D-1

FOR SALE

64" SOLID FIBRE BOARD PASTER FOR SALE

With New and Rebuilt Stations to handle 2 or 3 Plys (more Plys added to order) Handles up to 72" Diam. x 60" Wide rolls, producing sheets from 32" to 120" lengths and up to ¼" thick. New Rotary Cut-Off Knife and New Glue Station incorporated in this excellent and guaranteed machine. Complete with Mill Stands, Slitter Station, Press Roller Station, Glue Tanks, Motor, etc. Priced at 1/3rd of to-days Replacement Cost.

Box #49-554. Care Paper Trade Journal.
TF

FOR SALE—New 64" Maier Rotary Cut-Off Knife, cuts 32" to 120" sheet lengths up to ¼" thick board; new 100" Knowlton Bar Creaser with 4-crease widths. GREGGORY, INC., 203 No. Wabash Ave., Chicago, 1, Ill. TF

FOR SALE

1—Toledo Dial Scale Model 9210 A8 Serial No. 883835 for weighing samples in either 480 or 500 sheet reams.

1—Gearhead Motor 1/6 H.P. 220 volt, 1140 R.P.M.—19 R.P.M.

1—½ H.P. 220 volts, 1725 R.P.M.

2—½ H.P. 440 volts, 1740 R.P.M.

All like new with selling price 50% of new.

Osborne Paper Mill Equipment Corp.
Fulton, N. Y. **Tel. 54**
N-24

FOR SALE

One 3 color 41" Wolverine Roll to Roll Aniline Printing Press. With A.C. Motor Equipment and Reeves Variable Speed Drive. Practically new. Reasonably Priced. Address Box No. 49-557 care Paper Trade Journal. N-24

RATES FOR CLASSIFIED ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $2.50. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $2.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $2.50.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional.

Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 18, N. Y.

FOR SALE

BEATERS

1—Dilts 1500# beater, bandless roll 62" dia. 48" face, NEW filling, iron tub.
1—E. D. Jones 1000# beater, roll 50" x 44". Cast iron tub.
1—1500# broke beater, NEW wood tub, perforated backfall.
1—E. D. Jones 2500# iron tub beater. Roll 67" dia. 60" face.
1—E. D. Jones 1800# beater, NEW tub. Roll 65" dia., 52" face.
1—E. D. Jones 1500# beater, roll 54" dia. 52" face, NEW fillings.
1—50 ton breaker beater complete, Roll 60" dia. 54" face.

JORDANS

2—No. 1 Emerson Jordans NEW fillings.
1—Shartle Miami No. 2, NEW fillings.
2—Standard Wiener Refiners, new plugs and shells, designed for direct connecting.
1—E. D. Jones Majestic cluster fillings.
1—No. 1 Claflin refiner.

SUCTION ROLLS

1—16" x 86" Beloit suction drum roll.
1—14⅞" x 98" Sandusky suction couch.

DRYERS

20—NEW 36" dia. 84" face, passed for 50# W. P.
20—Black-Clawson 36" dia. 90" face, complete with frames, gears and bearings.
13—Rice-Barton 36" dia. 66" face.
5—Pusey Jones 48" dia. 160" face.

PRESSES

2—Complete press sections, rolls 110" face Rubber covered and brass covered rolls.
3—Pairs primary presses, rolls 108" face, rubber covered, complete with frames and bearings.
1—Complete press, rolls 16" dia. 66" face, 1" new rubber covering.

SCREENS

3—Bagley Sewall 12-plate flat screens.
1—Packer 10-plate flat screen.
1—Packer 8-plate flat screen.
1—Improved rotary knotter screen.

PUMPS

3—8 x 16 Black-Clawson triplex.
2—8 x 18 Beloit duplex.
50—Centrifugal and plunger pumps, various sizes, stock, circulating & pressure.

WET MACHINES

1—84" Bagley & Sewall wet machine.
1—74" Bagley & Sewall wet machine.

SHEETERS & TRIMMERS

1—56" Smith & Winchester undercut trimmer.
1—54" Holyoke trimmer, good condition reasonable.
—102" Hamblet sheeter with M.&W. layboy.
1—88" Hamblet sheeter with M.&W. layboy.
1—104" Beloit heavy duty duplex sheeter with M.&W. layboy.
1—124" Moore & White 4-drum winder, anti-friction bearings.
3—Warren Winders, 1—106", 2—116" face.

NEW ROLLS

6—5⅛" dia. 98" face NEW table rolls.
20—3" dia. 84" face NEW table rolls.
10—6" dia. 96" face NEW brass felt rolls.
5—7" dia. 108" face NEW brass felt rolls.
10—7" dia. 120" face NEW brass felt rolls.
2—8" dia. 120" face NEW brass felt rolls.
20—6½" dia. seamless steel dryer felt rolls.
Will alter the above to meet your requirements.

NEW BELTING

Goodyear #101 Compass belt 34" width.
Goodyear #51 Compass belt 28" width.
Goodrich Highflex 8" by 8 ply.
Goodrich Highflex 8" by 6 ply.
Goodyear, 8", 12 ply.
Goodyear, 16", 12 ply.
Goodrich Highflex 3", 4 ply.
Rubber covered couch rolls, rubber covered and brass covered press rolls, calender rolls, etc.

OSBORNE
PAPER MILL EQUIPMENT CORP.
Fulton, N. Y. Tel. 54
N-24

FOR SALE

GOOD VALUES—NEW & USED

60" Hamblet Sheeter with Erie layboy and 10 roll backstand, double deck, with shafts and chucks, also 4 sets of slitters. A fine value.
60" Langston heavy board Slitter.
32" Hobbs shear cut Slitter, rebuilt like new.
3-Color Rotary Web Press, 66" cyl.
39" Chandler & Price Automatic Power Paper Cutter.
New 44" National Auto. Power Cutter.
Baling Presses, both hand and power.
Motors, both A.C. & D.C. for any purpose.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.) TF

FOR SALE OR LEASE

Small paper mill with cylinder machine. Situated advantageously to sources of raw material and sales outlet. Ample room for converting plant in same building. Terms. Address Box 49-357, care Paper Trade Journal. TF

FOR SALE

1—Roll-O-Finer (Manufactured by Paper and Industrial Appliances, Inc.) Complete with G.E. motor, starter and auxilliary equipment. All equipment is in excellent condition. Address: Box 49-546 care Paper Trade Journal. D-1

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon, Laboratory Coating and Treating Machines. New improvement. MAYER MACHINE COMPANY, Inc., 1313 Buffalo Road, Rochester 11, N. Y. TF

FOR SALE—SURPLUS STOCK—2500 lbs. Aluminum Foil .00035 in 100 lb. 24" Mill Rolls. Original factory crates. Immediate shipment. Pollock Paper Corp., Box 5325, Dallas, Texas. N-24

FOR SALE—Two F. L. Smithe Webb Machines in 1st class condition equipped with 2 color printing units. Range sizes from Min. 3⅜ x 6¾ O.E. to Max. 7 x 8½ O.E. Address Box 49-452 care Paper Trade Journal. D-29

FOR RE-SALE

CAMACHINE REWINDERS AND TENSION CONTROL MILL ROLL STANDS

All Machines are New

1—42" type 10-6 rewinder.
1—42" type 40-8 rewinder.
1—26" type 24 2K rewinder.
2—52" type 40-IDF rewinders.
1—72" type 14 winder.
6—42" to 62" type BTP Constant Tension Mill Roll Stands.
1—42" type BT Constant Tension Mill Roll Stand.
1—82" type CTCR (double) Constant Tension Center Rewind Stand.

Subject to prior sales

CAMERON MACHINE COMPANY
61 Poplar Street, Brooklyn 2, N. Y.
N-24

FOR SALE

1—2-A Hudson-Sharp 3 web Napkin Folder. 13½" cut-off. 8" to 15" wide. With AC motor equipment. Production 1800 per minute. Perfect Condition.
1—Paper Converting Machine Co. 4-Web Dispenser Type Napkin Folder. Production 100M per Hour.
1—Paper Converting Machine Co. ¼ fold, 2 web napkin folder with embossing attachment, Extra Embossing rolls.
1—#2 Nash Hytor Vacuum Pumps.

CAMERON SLITTERS

1—40" Model 4-B.
1—42" Type 26, Model 2A.
1—42" Type 40-T.
1—50" and 1—60" Type 28, Model 3D.
1—52" Type 8-S.
1—62" and 1—65" Type 9.
1—62" Type 10-S.
1—62" Universal Type 6.
1—72" Type 10, Model 5.
1—82" Johnstone, Fourteen slitter and rewinder, New.
1—60" Kidder Model SH Slitter & Rewinder. Rewinds up to 40" diameter.
1—60" Hammersly Score Cut Slitter & Rewinder.
1—48" Inman Board Slitter and Rewinder. Rewinds 48" diameter rolls.
1—42" Kidder Merchant Model. Practically new. 61 cutters. 7½ HP Reliance Drive.
1—40" Model C Fales. Knife set-ups for ⅜" and ⅞" for 34" web.
1—32" Johnstone Type 12 Slitter & Rewinder. New For narrow slitting down to ¼".
Power Paper Cutters: 5 Seybold—1—40" & 1—50" 102, 64" 20th Century, 54" Holyoke, 84" 2-H. 5—Oswego—34", 44", 50", 57" and 63". White—1—40". 2 Acme—32" and 42". Sheridan—1—65". 3 S&W Undercut—63", 84" and 92".
1—84" waxing machine.
3—Potdevin Flat & Square Bag Machines. Models 292, 294 and 391.
1—Nasko High Speed Flat & Square Bag Machine. Complete and in A-1 condition. Large range of formers and gears.
1—45" German Dornbusch Embossing machine with two sets of embossing rolls.
1—50" Hudson-Sharp Model 8E Embosser. With two sets of embossing rolls.
1—45" Beck Rotary Sheet Cutters with 3 roll backstands and jogger delivery table.
1—40" and 1—48" Clark Rotary Sheet Cutter.
1—72" and 1—81" Hamblet Rotary Sheet Cutters with slitting attachments, automatic layboys, and 12-roll double deck backstands.
1—62" Dillon Duplex Rotary Sheet Cutter. With Slitting attachment and 24-Roll Double-deck Backstands.
2—Wide Duplex Rotary Sheet Cutters. One Hamblet 156". One Beloit 140".
1—81" Dietz Facial Tissue Paper perforator, 4½" perforation.
2—81" Dietz Toilet Paper Perforators. Sheets 4½ x 4½ and 4½ x 5 and paper towels perforated 7½ and 13½".
1—41" wide 3-color roll to roll Wolverine aniline printing press. Complete with Reeves Drive and A.C. motor equipment. practically new.
1—30" x 72" IMPCO. Cylinder Mould.
2—12" x 12" Beloit Triplex Plunger Stock Pumps.
5—Ten Plate Packer Screens.
1—Knapp, Model K.W. Napkin Wrapping Machine.
Refiners—1—Weiner, 1—Shartle.

GIBBS-BROWER COMPANY, INC.
21 East 40th St., New York 16, N. Y.
N-24

FOR SALE

FOR SALE

UNUSED G. E. TURBINE 125 H.P. 900 TO 200 R.P.M. OUTPUT FOR 125# P.S.I. STEAM AT 0° F SUPERHEAT DESIGNED FOR SUBSTANTIAL USE OF EXHAUST STEAM IN PROCESS AT 50 P.S.I. BACK PRESSURE.

Write Box 49-563 care Paper Trade Journal.

D-8

FOR SALE

Sterling Rotary 3 Color Press; Sheet Size 36½ x 45. Complete with Electrical Equipment and Continuous Chain Pile Delivery. In Good Operating Condition. New Haven Lathe; 33 Foot Base; 60 Inch Swing. Complete Electrical Equipment. Good Operating Condition.

Address Box 49-564, care Paper Trade Journal. D-8

FOR SALE: One 74" Century Trimmer, Mfgr. Harris Seybold Co. Can be seen in operation. Address Box No. 49-565 care Paper Trade Journal. D-8

FOR SALE—50" Oswego Power Paper Cutter —Back Gauge—Overhead Indication Tape —Foot Clamp—3 HP G. E. Motor. Price $900.00. Union Waxed Paper Corp., Hamburg, N. J.

WANTED

WANTED—Brightwood Box Machine. Address Box 49-275 care Paper Trade Journal.

PAPER MANUFACTURER desire to purchase or invest in converting business of standard paper products. Address Box 49-274 care Paper Trade Journal. TF

WANTED—W & P Shredders, Evaporators Generators and Boilers, Slitters, Cutters Hydraulic presses, Sheridan Presses, Dryers. Address Box 49-273 care Paper Trade Journal. TF

WANTED—One second hand 14 foot Globe rotary rag cooker, for pressures up to 120 pounds. Address Box 49-535 care Paper Trade Journal. TF

WANTED

Kidder-S-L Slitter

36" or 40"

for roller 1¼" O.D. ¼" I.D.

Premier Industries Inc.

Covington, Kentucky

D-15

WANTED

WANTED

Titaniums—Glycols
Alkalies—Waxes—Solvents
Colors—Oils—Residues, etc.

Chemical Service Corporation
86-04 Beaver St., New York 5, N. Y.

N-24

WANTED

One Simplex Cellophane Bag Machine. Address Box No. 49-556 care Paper Trade Journal. N-24

WANTED MACHINERY. All 72" to 84" equipment: Seybold fully automatic flat cutter;—Cameron Slitter with automatic splicer car;—Hamblet rotary cutter with layboy and backstand;—also hydraulic Baling Press. Address Box 49-559 care Paper Trade Journal. N-24

CLASSIFIED
ADVERTISING
BRINGS RESULTS

On Sale

1950 — 75th ANNUAL EDITION

LOCKWOOD'S DIRECTORY OF THE PAPER AND ALLIED TRADES

GUIDE TO THE PAPER INDUSTRY

SEND IN YOUR ORDER TODAY IF YOU HAVE NOT ALREADY DONE SO

Published by Lockwood Trade Journal Co. • 15 West 47th Street, New York 19, N. Y.

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LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.

LUBRICANTS
Sinclair Refining Co.
Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MAGAZINE REELS
Dilts Machine Works (Kohler System).

MATERIALS HANDLING
Cleveland Crane & Engrg. Co.
Frank G. Hough Co.
Stephens-Adamson Mfg. Co.
The Wellman Engrg. Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Lobdell Co.
Testing Machines, Inc.

MOISTURE CONTENT CONTROL
Stickle Steam Specialties Co

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
Chicago Electric Company
Fairbanks, Morse & Co.
General Electric Company
Reliance Electric & Engrg. Co.

NICKEL AND NICKEL ALLOYS
The International Nickel Co.

NOZZLES
Link Belt Company

PACKING BOXES
Johnson Corporation
The Moore & White Co.
Perfecting Service Corp.
Shartle Brothers Machine Co.

PAPER MACHINES
Bagley & Sewall Co.
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINE SLICES
Black-Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.

PASTING MACHINES
Black-Clawson Company
Davis, Frank H., Co.
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

PERFORATED METAL
Allis-Chalmers Mfg. Co.

PIPE
American Cast Iron Pipe Co.
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Michigan Pipe Co.
Michigan Steel Casting Co.
National Tube Co.
Walworth Company
Youngstown Welding & Engrg. Co.

PIPE FITTINGS
American Cast Iron Pipe Co.
The American Rolling Mill Co.
Crane Company
Michigan Steel Casting Co.
Phoenix Products Co.
Walworth Co.

PIPE MARKERS
W. H. Brady Co.

PITCH CONTROL
General Dyestuff Corp.
Monsanto Chemical Company
Rohm & Haas Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
I. O. Ross Engrg. Corp.
Lukenweld Division
Lukens Steel Company
Timken Roller Bearing Co.

PLUGS
The Appleton Machine Co.
Black-Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

PRECIPITATORS
Koppers Co., Inc.

PRECISION SAMPLE CUTTER
Testing Machines, Inc.

PRESERVATIVES
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

PRESSURE VESSELS, STEEL AND ALLOY
Babcock & Wilcox Co.
The Biggs Boiler Works Co.

PRESSES
Black-Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
The Moore & White Co.
Paper Converting Machine Co., Inc.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULP CLASSIFIER
The Bauer Bros. Co.

PULP STOCK VALVES
Crane Company
Record Fdy. & Mach. Co.
Shartle Bros. Mach. Co.

PULPERS
Bauer Brothers Co.
Dilts Machine Works
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

PULPS
Brown Company
Bulkley, Dunton Pulp Co., Inc.
Gotteman & Co., Inc.
Elof Hansson, Inc.
Lyddon & Co. (America), Inc.
Parsons & Whittemore, Inc.

WHERE TO BUY

Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co
Pulp Sales Corp.

PULPSTONES
Norton Company

PUMPS
Allis-Chalmers Mfg. Co.
Black-Clawson Company
Buffalo Pumps, Inc.
Byron Jackson Co.
DeLaval Steam Turbine Co.
Dorr Company
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Frederick Iron & Steel, Inc.
Gibbs-Brower Company, Inc
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Paper Converting Mch. Co
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Company

RADIANT BURNERS
Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES
William Allen Son's Company
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS
Gibbs-Brower Company, Inc
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECAUSTICIZING PLANTS
The Dorr Company

RECOVERY SYSTEMS
William Allen Son's Company
Babcock & Wilcox Co.
Bulkley, Dunton Pulp Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O
Valley Iron Works Co.

REELS
The Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works (Kohler System)
Downingtown Mfg. Co.
Hudson Sharp Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg Co.

REFINERS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Bristol Company
DeZurik Shower Company
The Foxboro Company
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
Minneapolis-Honeywell Regulator Co.
National Technical Laboratories
Shartle Brothers
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan

RESEARCH CHEMISTS
Timber Engrg. Co.

RESINS
American Cyanamid Company
Industrial Chemicals Division
The Dow Chemical Company
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Rohm & Haas Co., Resinous Products Div.

ROLLS
American Cast Iron Pipe Co
Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc
Lobdell Co.
Edward J. McBride & Co.
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, B. F., & Sons Co
Philrick Engrg. Corp.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co
Smith & Winchester Mfg. Co
Valley Iron Works Co.
Waldron Corp., John
The Youngstown Welding & Engrg. Co.

ROLL COVERS
The Cincinnati Rubber Mfg. Co
The Goodyear Tire & Rubber Company
Edward J. McBride & Co.
Stowe-Woodward, Inc.

ROLL HANDLING EQUIPMENT
Dilts Machine Works (Kohler System).

ROLL STANDS
Cameron Machine Co.
Frank W. Egan & Co.
Moore & White Co.
Potdevin Machine Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

ROPE CARRIERS
The Moore & White Co.

ROTARY BOILERS
The Biggs Boiler Works Co

ROTARY STEAM JOINTS
Johnson Corp.
The Moore & White Co.
Perfecting Service Corp.

RUBBER PRODUCTS
The Goodyear Tire & Rubber Company

SATURANTS
American Anode Div., The B. F. Goodrich Chem. Co.

SATURATING MACHINES
Black-Clawson Company
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc
Moore & White Co.
Noble & Wood Machine Co
Potdevin Machine Co.
Shartle Brothers Machine Co
Waldron Corp., John
Weber, Herman G.

SAVEALLS
Bird Machine Company
Hardinge Company

SCALES
Fairbanks, Morse & Co.
Merrick Scale Mfg. Co.
Testing Machines, Inc.

SCREEN PLATES
Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co
Testing Machines, Inc.

SCREENS
Allis-Chalmers Mfg. Co.
Appleton Wire Works
Appleton Machine Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co
Stephens-Adamson Mfg. Co.
Valley Iron Works Co.

SHEET MACHINES
Gibbs-Brower Company, Inc
Thomas W. Hall Co.
Valley Iron Works Co.

SHOWER PIPES
Bird Machine Company
DeZurik Shower Company
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co
Shartle Bros. Mach. Co.
Smith & Winchester Mfg. Co

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.

SIZING
American Cyanamid Company, Industrial Chemicals Division
Black-Clawson Company
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Stein-Hall Co., Inc.

SIZING TESTER
W. & L. E. Gurley
Testing Machines, Inc.

SLIME CONTROL
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.
Vanderbilt Co., R. T.

SLITTERS
Black-Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS
The Biggs Boiler Works Co

SPECIAL MACHINERY
Dilts Machine Works.

SPLICING TISSUE
Williams-Gray Co.

SOFTNESS-STIFFNESS TESTER
W. & L. E. Gurley
Testing Machines, Inc.

SOLUBLE OILS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

STAINLESS STEEL
American Cast Iron Pipe Co.
Armco Steel Corp.
Michigan Steel Casting Co.
U. S. Steel Corp.

STARCH
American Cyanamid Company, Industrial Chemicals Division
A. M. Meincke & Son, Inc.
Clinton Industries, Inc.
The Hubinger Co.
National Starch Products Inc.
Stein-Hall Co., Inc.

STEAM JOINTS
The Moore & White Co.

STEAM SPECIALTIES
Babcock & Wilcox Co.
Combustion Engrg. Co., Inc.
Davis Engrg. Corp.
Johnson Corp.
Perfecting Service Corp.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

STEEL
Allegheny Ludlum Steel Corp.
Armco Steel Corp.
Carnegie Illinois Steel Co.
Lukens Steel Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD
Babcock & Wilcox Co.
Lukens Steel Company

STEEL TANKS
The Biggs Boiler Works Co.

STRAPPINGS & STRAPPING MACHINES
The Stanley Works

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES
Black-Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

SUCTION UNIT
Paper & Industrial Appliances, Inc.

SULPHUR
American Cyanamid Company, Industrial Chemicals Division
Texas Gulf Sulphur Co.
Witco Chemical Company

SULPHUR BURNERS
Valley Iron Works Co.

SULPHUR DIOXIDE
American Cyanamid Co., Calco Chemical Div.
Virginia Smelting Co.

SUPERCALENDERS
The Appleton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES
American Anode Div., The B. F. Goodrich Chem. Co.
The Goodyear Tire & Rubber Company
Nopco Chemical Co.

TACHOMETERS
The Brown Instrument Co.

TAKE-OFF UNITS
Dilts Machine Works (Kohler System).

TALC
American Cyanamid Company, Industrial Chemicals Division
Vanderbilt Co., R. T.

TANKS
The Biggs Boiler Works Co
Cochrane Corp.
Kalamazoo Tank & Silo Co.
The Noble & Wood Machine Co.
B. F. Perkins & Son, Inc.
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Waldron Corp., John

TEARING TESTERS
Testing Machines, Inc.

TENSILE TESTERS
B. F. Perkins & Son, Inc.
Testing Machines Inc.

WHERE TO BUY

THICKENERS, DECKERS AND SAVEALLS
The Appleton Machine Co.
Bird Machine Company
Bulkley, Dunton Pulp Co., Inc.
Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Hardinge Co., Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Oliver United Filters, Inc.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Valley Iron Works Co.

TIMBER ROOF TRUSS DESIGNS
Timber Engrg. Co.

TITANIUM
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.
Witco Chemical Company

TOOLS
The Stanley Works
Walworth Company

TRACTOR SHOVELS
Frank G. Hough Co.

TRACTORS & TRUCKS
Frank G. Hough Co.
Townsutor Corp.

TRANSMISSIONS
Link Belt Company
Stephens-Adamson Mfg. Co.

TRAPS
Armstrong Machine Works
Crane Co.
Johnson Corporation
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

TUBES
Babcock & Wilcox Co.
National Tube Co.

TUBING MACHINES
Dilts Machine Works.

TUBING, MECHANICAL
National Tube Co.

TUBS
Rodney Hunt Machine Co.
Shartle Brothers
Valley Iron Works Co.

TURBINES
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company
Hunt, Rodney, Mach. Co.

TURPENTINE RECOVERY
Foster Wheeler Corp.

UNWINDERS
Dilts Machine Works (Kohler System).

USED EQUIPMENT
Frank H. Davis Company
Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.

VALVES
Askania Regulator Co.
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
Crane Company
Dilts Machine Works
The Foxboro Company
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdy. & Mch. Co.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies
Trumbey Mach. Wks.
Valley Iron Works Co.
Walworth Company

WASHERS
Bird Machine Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
Oliver United Filters
The Sandy Hill Iron & Brass Wks.
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

WASTE TREATING EQUIPMENT
The Dorr Company
Hungerford & Terry, Inc.

WATER CONDITIONING
Calgon, Inc.
General Dyestuff Corp.
Hungerford & Terry, Inc.
National Aluminate Corp.

WATER DISPERSIONS
American Anode, Inc.
Rohm & Haas Co., Resinous Products Div.

WATER FINISH EQUIPMENT
Dilts Machine Works.

WATER SOFTENERS
Hungerford & Terry, Inc.

WAXING MACHINERY
Black-Clawson Co.
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

WEB TENSION CONTROL
Dilts Machine Works (Kohler System).

WELDING EQUIPMENT
General Electric Company
Walworth Company

WET MACHINES
Black-Clawson Co.
Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Pusey & Jones Company
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WETTING AGENTS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

WHITE WATER HEATERS, AUTOMATIC SELF CLEANING TYPE
Davis Engineering Corp.

WHITE WATER TREATING EQUIPT.
Hungerford & Terry, Inc.

WINDERS AND REWINDERS
The Appleton Machine Co.
Black-Clawson Company
Cameron Machine Co.
Dietz Machine Works
Dilts Machine Works* (Kohler System)
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Mach. Co.
Langston Co., Samuel M.
Moore & White Co.
Paper Converting Mch. Co.
Potdevin Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Waldron Corp., John

WINDING ROLL CHANGERS
Dilts Machine Works (Kohler System).

WIRE BRUSHES
M. W. Jenkins Sons Inc.

WIRES
Appleton Wire Works
Bulkley, Dunton Pulp Co., Inc.
International Wire Works
Lindsay Wire Weaving Co.
Williams-Gray Co.

WIRE BRUSHES
Williams-Gray Co.

WOOD SPLITTERS
The Appleton Machine Co.
Carthage Machine Co.

ADVERTISERS

IN THIS ISSUE

A

Allis-Chalmers Mfg. Co. 3
Appleton Wire Works, Inc. .. 7
Appleton Woolen Mills, Inc. .. 50

C

Calgon, Inc. 53
Chicago Electric Co. 48
Classified Advertising 42
Colledge, E. W. 49

D

Davis, Frank H., Co. 45
DeZurik Shower Co. 47
Dow Chemical Co. 26
Dow Corning Corp. 40
Du Pont de Nemours & Co., Ammonia Dept. 15

E

Ebasco Services, Inc. 50

F

Ferguson Co., H. K. 33
Ferguson, Hardy S., & Co. 50

G

Gibbs-Brower Co., Inc. 43
Goodyear Tire & Rubber Co. Back Cover

H

Hagan Corp. 53
Hall, Thomas W., Co. 43
Hungerford & Terry, Inc. 45

I

International Wire Works 50

K

Kinsley Chemical Co. 45

L

Langston Co., Samuel M. 50
Lyddon Co. 41

M

Main, Inc., Charles T. 50
Michigan Steel Casting Co. 45

N

Norton Co. 13

O

Osborne Paper Mill Equipment Corp. 42-43

P

Parsons & Whittemore 41
Price & Pierce, Ltd. 48

R

Raymond Service, Charles P. .. 42

S

Sandy Hill Iron & Brass Wks. 45
Shartle Brothers Machine Co. . 44
Sindar Corp. 46
Swenson Evaporator Co. Front Cover

T

Texas Co., The 4
Tidewater Assoc. Oil Co. 17

W

West Virginia Pulp & Paper Co. 45
Wyandotte Chemicals Corp. 2

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